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CORONARY DISEASE

A SYMPOSIUM*

THE BLOOD SUPPLY OF THE HEART WALL

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Although the distribution of blood vessels to the heart wall has been studied by numerous investigators since the time of Vesalius and Fallopius, many details have been understood only comparatively recently and some are disputed still. A recitation of the general distribution of the coronary vessels is not within the scope of this paper and is not justified since such facts may be had by reference to any standard textbook of anatomy. The discussion will, therefore, be limited to a consideration of a few of the less well-known features. No review of the literature will be attempted but a few important references are appended for the convenience of the interested reader.

DISTRIBUTION OF CORONARY ARTERIES TO VENTRICLES

In general the right coronary artery is distributed to the wall of the right ventricle and the left to the wall of the left ventricle. However, in order to complete the picture the following additional statements must be made: (1) A narrow longitudinal area in the posterior wall of the left ventricle approximately one-sixth the width of the wall is supplied by both the right and left coronary; (2) to the right of this area the posterior wall of the left ventricle is supplied by the right coronary; (3) approximately the middle longitudinal third of the interventricular septum is supplied by both coronaries, the posterior portion of the septum being supplied by the right and the anterior by the left coronary; (4) a narrow portion in the medial part of the anterior wall of the right ventricle receives a supply from both coronaries.

DISTRIBUTION OF CORONARY ARTERIES TO THE ATRIA*

The atrial branches are less constant than those of the ventricles. Two branches from the right circumflex supply the right atrium. One of these supplies the anterior wall, the appendage, the interatrial septum and the posterior wall of this chamber. It passes through the septum to reach the posterior wall and at its termination forms a ring about the opening of the superior vena cava and sends arborizations to the atrioventricular node. This artery anastomoses freely with other atrial arteries. It may arise from the left coronary. A second branch from the right circumflex courses upward on the aortic surface of the right auricular appendage and supplies the superior aspect of the wall. A lateral branch may be given off from the right coronary near the right border to supply the right surface and terminate near the inferior vena caval opening. One or two small atrial branches from the left coronary and numerous inconstant twigs from both coronaries complete the arterial distribution but are subject to so much irregularity that special consideration of them is impractical for present purposes.

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*In the use of the term "atrium" to designate the receiving chamber of the heart the authors conform to BNA nomenclature. The term "auricle" or "auricular appendage" is reserved for the blind upward extension of the chamber.

Numerous small arterial twigs from each coronary system ramify and anastomose freely in the adipose tissue of the epicardium.

VEINS OF THE HEART WALL

The coronary veins and their branches tend to follow the arteries. However, since they are, in general, tributary to the coronary sinus, the course of the larger branches departs from that of the arteries near their origin to reach the posterior coronary sulcus. Special mention may be made of the thebesian veins. These minute channels empty directly into the heart chambers. They have been the subject of considerable discussion but it is now generally recognized that they exist in large numbers in the right auricle, especially in the interatrial septum, are less numerous in the left atrium and also exist in the ventricular walls. In the latter they are most numerous in the region of the conus of the right ventricle, in the region of the bases of the papillary muscles, and in the musculature of the apex. They are of two types: (1) with small openings 1-2 mm. in diameter which drain capillaries into the chambers, and (2) larger channels which drain veins of the musculature into the chambers. In the ventricles the thebesian veins probably drain chiefly the subendocardial area and communicate with the larger veins only through capillaries. The abundance of venous channels is striking, as indicated by the cast (fig. 1).

Fig. 1. Celloidin-rubber cast of the coronary veins in the wall of the human heart. Note the greater number of veins in comparison to the arteries in the heart wall; the many venous anastomoses; that only a few veins to the atria have been injected, possibly due to the fact the cannula was passed into the coronary sinus beyond the entrance of the veins draining the atria.

COLLATERAL CIRCULATION OF HEART WALL

The existence of anastomoses between the coronary arteries has been a subject of long discussion and investigation because of its bearing on the subject of infarction. Even though questioned during comparatively recent times, the fact that such anastomoses do exist is now well established and is demonstrable in the casts featured (figs.2-4). However, while no one who has followed the work on the subject questions the presence of anastomoses, there seems to be a general lack of appreciation among clinicians of the abundance of collateral channels in the coronary circulation. An examination

Fig. 2. Celloidin-rubber cast of the coronary arteries in the human showing the diaphragmatic surface of the heart. The left border of the heart is at the observer's left. Note the posterior descending branch of the right coronary as it courses to the apex and divides, in this cast, into two large branches; the interventricular septum is the dark area in the midregion extending roughly parallel to the left border of the heart; the presence of numerous anastomoses.

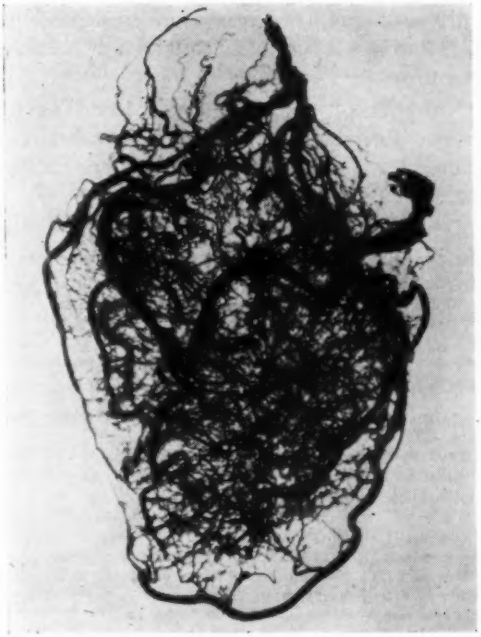

Fig. 3. Celloidin-rubber cast of the coronary arteries in the human showing the right blunt border. The anterior surface of the heart is toward the observer's right. Note the circumflex segment of the right coronary; the septum viewed broadside which is the darker area filling most of the heart; the abundant anastomoses.

of casts such as those featured here confirms the findings of numerous investigators (Gross) that abundant anastomoses exist not only in the form of capillaries but by means of comparatively large arteries and veins connecting branches of the right and left coronary systems and connecting the right and left systems themselves. Even a cursory study of such preparations makes it very evident that the explanation of the pathology of coronary occlusion is not to be found in end arteries.

Extracardiac anastomoses of the coronary arteries have been demonstrated by Hudson, Moritz, and Wearn by injecting India ink into the coronary arteries. By this procedure they found connections with: (1) vasa vasorum of the aorta as far distally as the level of the diaphragm; (2) vasa vasorum of the pulmonary artery from its origin to well within the lung substance; (3) vessels in the pericardium; (4) vessels in the diaphragm arranged in a fan-like manner over each dome as well as on the abdominal surface; (5) vessels over the pleural surfaces of the lungs and along the bronchi as far as the second bifurcations; (6) vessels in the mediastinum, trachea, and esophagus.

Communications between vessels of the heart wall and the heart chambers consist of: (1) arterioluminal vessels (Wearn), small arterioles connecting the coronary arteries directly with the chambers; (2) arteriosinusoidal vessels (Wearn, Mettier, Klumpp, and Zschiesche), consisting of branches of small arteries which terminate by arborization into sinusoids of 50 to 250 micra in diameter instead of into capillaries. At their distal ends these sinusoids open into the heart chambers.

BLOOD SUPPLY OF HEART VALVES

The blood supply of heart valves has been considered of some importance in relation to valvular endocarditis. Wearn and Gross discuss this subject and agree that blood vessels do occur in normal valve cusps. The former

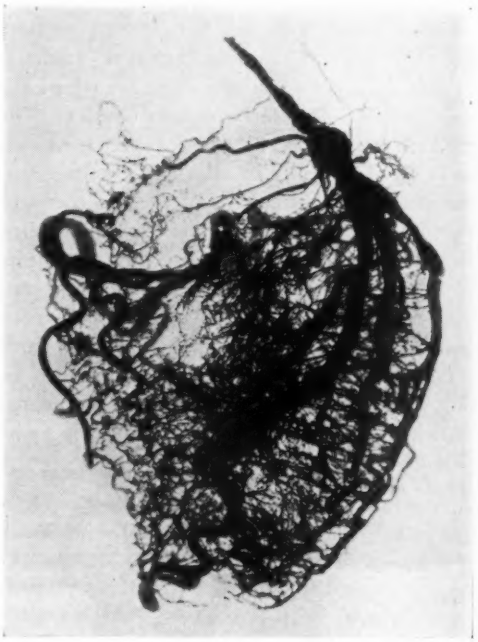

Fig. 4. Celloidin-rubber cast of the coronary arteries in the human. The left border of the heart is at the reader's right. Note the abundant vascular supply to the ventricles and the relatively sparse distribution to the auricles; the large anterior descending ramus of the left coronary coursing to the apex; the dark area in the midregion between the right and left ventricles which is the interventricular septum; the profusion of anastomoses over the surface of the ventricles.

demonstrated them in 168 of 255 normal human hearts while the latter seems to feel that they are present in fetal hearts but regress as age advances. Other workers believe they exist only in inflammatory conditions or that they are present only in a small percentage of normal hearts, if at all.

BLOOD SUPPLY OF NEUROMUSCULAR TISSUE

Gross, on the basis of a study of 100 hearts, states that he is "of the opinion that a distinct and specific blood supply exists for both sinoatrial and atrioventricular nodes, the main bundle, the first portion of the left limb and a large part of the right limb of the neuromuscular system. The remainder shows a supply which corresponds to the area of heart musculature on which it rests." The sinoatrial node is supplied by a fairly large branch which arises from the right coronary artery near its origin. The atrioventricular node is supplied by a slender twig from the branch of the posterior descending division of the right coronary which supplies the fibrous septum. The right limb of the neuromuscular bundle is supplied by a comparatively large branch of the anterior descending left coronary division. The left limb of the bundle has no specific vessels but is supplied on its septal aspect by numerous branches from anastomoses of the two coronary arteries; the remainder of this limb is supplied by variable branches of vessels in the heart musculature. There is marked variation and profuse anastomosis of the above arteries. A more detailed study of a large number of hearts will be necessary before definite statements can be made regarding the blood supply of the neuromuscular tissue if definite clinical use is to be made of it.

SUMMARY

The features of the anatomy of the coronary circulation which should be emphasized are: (1) The abundance of vessels (arteries, veins, sinusoids, and capillaries) is probably much greater in proportion to total volume of heart wall than is commonly supposed; (2) communications between the heart chambers and arteries in the heart wall do exist; (3) anastomoses between the right and left coronary arteries are exceedingly numerous both in the form of arterioles and capillaries.

While the vessels to the ventricular walls are fairly well-known and reasonably constant, those to the atrial walls are less well-known and subject to marked variation.

Valve cusps probably have a blood supply in a considerable majority of human hearts but authorities do not agree as to their presence in the adult heart.

Definite arteries to the neuromuscular tissue are described but a considerable portion of this tissue is supplied by numerous small and inconstant branches. A free anastomosis between the branches seems to be agreed upon.

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PHYSIOLOGY OF THE CORONARY CIRCULATION

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The problem of the coronary circulation is almost exclusively a problem of the oxygen supply to the myocardium. In the absence of other disease, such as diabetes, the removal of metabolic waste materials and the supply of foodstuffs by the blood stream is of quite subsidiary importance. Infarction is a result of the cutting off of oxygen and the changes which occur in the muscle in chronic coronary insufficiency are the direct or secondary effects of an inadequate oxygen supply.

It is for this reason that the coronary circulation cannot be approached intelligently unless something is known of the factors which increase or decrease the oxygen utilization of heart muscle. The oxygen consumption of the muscle will be a measure of oxygen requirement. Coronary disease acquires clinical significance only when, under conditions of stress, the supply of oxygen is insufficient to meet the demand or requirement.

In the normal heart, it is sufficiently correct to say that oxygen requirement will be proportional to the work done. But this is not true in the dilating and failing heart. As the amply confirmed experiments of Starling and Visscher demonstrated, the oxygen requirement of heart muscle is proportional, within fairly wide limits, not to work done, but to the diastolic volume of the ventricles. Thus the failing and dilated heart, though doing even less work than a normal heart, will demand a very significantly greater amount of oxygen than the normal heart. Its efficiency is greatly diminished.

In addition to diastolic volume, an increase in the per minute heart rate will increase the demand for oxygen. But this is only true provided a decrease in diastolic volume associated with the increased rate does not offset the effect of the acceleration. In the failing heart a significantly decreased volume is unlikely to occur. Thus, both dilatation and the usual cardiac acceleration contribute to the increased need for oxygen in failure.

It is precisely at this time when the need is greatest that diseased coronary arteries are unable to meet the demand. Their rigid or semirigid walls and narrowed lumina will not permit the passage of enough oxygenated blood. In consequence, the myocardium becomes yet more enfeebled; there is yet more dilatation associated, as a rule, with further augmentation in rate. And thus the demand, which could not be met before, is raised still further. A vicious circle, manifesting itself as acute congestive failure, has been precipitated. The precipitating agent may have been undue exertion or the raised metabolism engendered by the hyperpyrexia in an acute infection.

The operation of those mechanisms which normally adjust the blood and oxygen supply of the heart to its requirements are less important in the presence of coronary disease than in the normal heart. For the diseased artery is one which, because of the rigidity of its wall and the narrowness of its lumen, is unable to respond to the influences which cause the normal artery to dilate or constrict. From the standpoint of coronary disease, the important factor is one which has a minor or negligible role in the normal heart. This is the production or development of a collateral circulation, whether by way of arterial anastomoses or by way of the thebesian veins or other vessels connecting the ventricular cavities with the muscle. That these alternative pathways are important in coronary occlusion is proved by the observations of Wearn and others that at autopsy both coronaries may sometimes be completely occluded, yet there is no infarction of the myocardium.

VOLUME OF CORONARY FLOW

In the normal heart, the volume of the coronary flow is about 210 c.c. per minute, or about five or six per cent of the total output of the left ventricle. Under various physiological conditions this volume will vary greatly. The factors responsible for the variations are the aortic blood pressure, the nerve supply, the accumulation of metabolites, and the heart rate. Under special conditions, the strength of systole, the diastolic volume of the ventricles, the diastolic pressure within the right auricle, and the action of drugs may be of importance.

There is no disagreement among students with respect to the importance of aortic pressure. The higher the aortic pressure, the greater the flow through the coronary arteries. This is well shown in the experiments of Markwalder and Starling and of Dusser de Barenne.

In some of the experiments, the coronary flow actually exceeded the systemic flow, when mean pressures were exceedingly high. However, these experiments do not mean that in human hypertension a similar augmentation will occur. In the experiments, the systemic, but not the coronary resistance was raised. If, in hypertension, the coronary resistance is raised as much as the systemic, no greater percentage of the blood than in the normal heart will be diverted into the coronary arteries. If, however, the coronary resistance is increased less then the systemic, there will be a relative increase in coronary flow. The distinction between so-called benign and malignant hypertension may perhaps be found to depend upon the relative condition of the coronary circulation.

INFLUENCE OF SYSTOLIC AND DIASTOLIC PRESSURE

With respect to the question as to whether systolic or diastolic pressure has the greater influence on coronary flow, there is less agreement. Most investigators (Evans, Anrep,

Starling) appear to regard the mean pressure, and not systolic or diastolic as the important one. F. M. Smith regarded diastolic pressure as the more important. Wiggers, position seems to be sounder, namely that systolic pressure and its fluctuations largely determine systolic flow, and diastolic pressure and its fluctuations determine diastolic flow. For practical purposes this amounts to the prevailing view.

In regard to the distribution of flow during systole and diastole there is considerable diversity of opinion. Anrep and his colleagues believed that there was practically a complete cessation of inflow into the coronaries during the latter two thirds of systole, so that the greater part of the inflow occurred during diastole. Wiggers and his colleagues (Cotton, Green, Gregg) are at the other extreme and regard volume inflow during systole as substantially equal to the flow during diastole. The chief reason why diastolic flow, at ordinary heart rates exceeds systolic is because diastole lasts longer. A careful consideration of the methods employed and of the results will probably convince the unbiased observer that the truth here lies between the extremes so far as total coronary flow, both right and left, is concerned. Wiggers has proved that when the aortic pressure, under experimental conditions, exceeds the force of the muscular contraction, the flow, although slowed up, does not cease. The contraction of the right ventricle is feeble in comparison with that of the left. Thus the rise in aortic pressure during systole will offset the tendency to reduction in right coronary flow brought about by muscle contraction. In the left ventricle, on the other hand, particularly in the deeper muscle layers near the endocardium, the flow may nearly cease during systole.

In any event, the question seems to be relatively unimportant excepting in the presence of valve lesions. In aortic stenosis, the contraction of the muscle is powerful in comparison with aortic pressure, and here, as Green has demonstrated, there is a considerable reduction in systolic flow. This, together with narrowing of a coronary vessel in rheumatic heart disease, might well have serious consequences.

The question of coronary flow in aortic regurgitation is yet unsettled. Most observers, impressed with the low diastolic pressure, are likely to assume that minute coronary flow will be diminished. In this connection, again, the experiments of Green are interesting. In "uncompensated" aortic regurgitation, when diastolic pressure fell but systolic was unchanged, Green found no change in systolic flow, but a 30 to 40 per cent decrease in the diastolic. After measures were taken to restore the mean pressure to normal, the systolic flow actually exceeded the normal by about 10 per cent. In the clinical case, the fall in diastolic pressure is nearly, if not quite, compensated for by a rise in the systolic. Thus, if Green's experimental results apply, the total flow will not be diminished unless diastole is unduly prolonged. Prolongation of diastole will be undesirable not only because of decreased flow, but also because more time is allowed for regurgitation of blood. The result of the latter factor will be an increased diastolic volume. The increased oxygen demand thus brought about may be as great as the decrease due to the slower rate. In the face of increased demand, the supply, due to the long diastole, may be unchanged or actually diminished. Therefore a relative oxygen deficiency should be expected particularly in the deeper layers of the left ventricle and in the septum. It is there that pathologic changes should occur most frequently. That is what the electrocardiogram also suggests. I do not know whether the pathologist will bear me out in this conjecture.

INFLUENCE OF NERVES

Turning now to the influence of nerves in regulating the caliber of the coronary vessels, controversy still rages in this field. Among physiologists, however, there is fair unanimity of opinion. Coronary dilatation or at least increased coronary flow is brought about by sympathetic nerve impulses. Teleologically, this is as it should be. During severe exercise, when the sympathetic system is brought into more or less general activity, it would be disastrous if coronary constriction occurred. However, experiments are not lacking which prove the presence of vasoconstrictor fibers in the cardiac nerves. Their influence may be largely limited to the larger vessels, the smaller vessels being supplied by vasodilator fibers. Other factors, such as the increased production of acid metabolites, may also contribute to dilatation

during exercise. The adrenalin, thrown into the blood stream during exercise, is regarded by some as a coronary constrictor, by others as a coronary dilator.

In the vagus nerve, on the other hand, it is rather generally agreed that vasoconstrictor fibers are predominant. As Anrep demonstrated, cutting the vagi in the dog increases coronary flow. Normally, when the cardiac output is increased, a reflex is brought into play which automatically dilates the coronary vessels.

There seems to be no dissent from the view that acid metabolites will cause dilatation of the coronary vessels just as will a moderate increase in hydrogen ion concentration. The action of the metabolites is probably upon the smaller vessels. All clinicians know of victims of angina pectoris who experience pain early after the beginning of exercise, but whose pain disappears as the exercise is continued. Metabolites formed in that part of the muscle suffering from lack of oxygen may cause dilatation of anastomotic vessels in these cases, or adrenalin may exert a dilating effect. In any event, one might suppose such cases would be particularly amenable to treatment.

The effect of heart rate upon coronary flow has not yet been settled. Wiggers quotes Anrep as concluding that the flow diminished as the rate progressively increases. Yet Anrep and Segall stated that increased rate, within limits which were not excessive, had no effect upon the output from the coronary sinus. F. M. Smith reported diminished minute flow when the heart was considerably accelerated. In this connection, it must be remembered that the length of systole decreases as heart rate increases, although not to the same degree as the length of diastole. I believe we are justified in concluding that decrease in coronary flow due to cardiac acceleration is unimportant unless the acceleration is great. Far more important is the increase in oxygen requirement which will be present unless the increased rate is offset by a comparable decrease in diastolic volume. When coronary sclerosis is present, an increased heart rate may be associated with a relatively static diastolic volume (or more correctly, a static diastolic fiber length in the muscle supplied by the damaged vessel). Under these conditions metabolites accumulate and pain makes its appearance.

HEART IN ANGINA PECTORIS

In conclusion, I would like to present a brief picture of the heart in angina pectoris. Assume that a calcified plaque is located near the origin of the anterior descending branch of the left coronary artery; at rest, mental and physical, the patient experiences no discomfort. On walking a few blocks, particularly if he hurries or feels hurried, he is seized by the sense of suffocation and pain characteristic of the condition. What are the physiologic factors called into play?

At rest, the flow through the artery, though limited, is sufficient for the oxidative processes in the muscle. These are the combustion of fat and carbohydrate the energy being used for resynthesis of lactic acid which, in turn, on its break down, brings about the resynthesis of creatine and phosphoric acid to phosphogen. The flow through the stenosed artery may be aided by a flow through anastomotic vessels, and possibly, by a flow into and out of the thebesian veins or other openings from the left ventricular cavity. This accessory blood supply may indeed be so great that, when the anterior descending branch is finally occluded, no infarction occurs.

On exertion, the output of blood from the left ventricle is increased. Because of cardiac acceleration, or increased diastolic ventricular volume, or both, the demand for oxygen on the part of the muscle is increased. In part the increased demand is met by increased oxygen utilization from the blood, but this factor may already have been in operation before exercise. So now, in spite of the slightly increased volume flow through the affected area, there is a relative oxygen deficiency. Acid metabolites begin to accumulate; the sympathetic nervous system is more active; adrenalin is brought from the suprarenal medulla. These factors cooperate to dilate the smaller vessels in the area. If the dilatation of communicating branches is sufficient, enough oxygen may be supplied and the pain may disappear. More often the patient will cease his exertion. Then, in part through the cooperation of the factors enumerated, in part because of lessened work of the heart, the oxygen supply again becomes adequate and the

pain disappears. The raised aortic pressure will be a factor contributing more blood, but the increased load thrown upon the heart usually more than offsets this effect.

Amyl nitrite or nitroglycerin may give relief because of dilation of the anastomotic coronary vessels in some cases. But probably more often the fall in systemic pressure, relieving the muscle of part of its load and reducing diastolic volume, is the more important factor.

SUMMARY

If coronary thrombosis finally occurs, the outcome will depend largely upon the ability of anastomoses to carry on. For their development, if the picture is correct, daily or more frequent moderate exercise, within the patient's limitation as suggested by Conner, would seem to be sound treatment.

DIAGNOSIS OF CORONARY OCCLUSION

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It is really astonishing to realize that a disease entity, practically unknown prior to 1912, at the present time is amongst the chief causes of death in the medical profession and is a disorder which in its typical expressions is recognized by the veriest tyro in medical knowledge. Even the specialists in branches of medicine other than internal medicine make the diagnosis repeatedly and correctly. However, there do exist many cases which are by no means typical where the physician should be on his guard.

SYMPTOMATOLOGY

Anginal pain very commonly precedes an attack of coronary occlusion. Another premonitory symptom of some importance is ease of fatigue which may antedate the actual occlusion sometime before the occluding attack. When obstruction occurs the symptoms that develop may be divided into three groups: (1) those that take place immediately and at the time of the attack; (2) the heart symptoms, and (3) symptoms that develop as result of death of the heart muscle.

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The Attack: The characteristic substernal pain referred down the left arm or up the left side of the neck may be unusual in that the reference is entirely to the epigastrium. On the other hand, the occasional case is seen in which there is no pain whatsoever. Shock is another expression of, or is dependent upon, the severe pain. There appear the usual symptoms of shock: low blood pressure, leaking skin and urinary suppression. Shortness of breath is of diagnostic moment chiefly in those patients in whom coronary occlusion occurs without pain.

Cardiac Symptoms and Signs: Dyspnea is almost an invariable concomitant of the condition. Congestive failure, with its train of events, develops commonly when there is extensive infarction. On the other hand, in some instances at no time does congestive failure evidence itself in any way but this applies particularly to the minimal degrees of occlusion that cause so much confusion at times in the diagnostician's mind. Of the physical signs, by far the most important to establish definitely the diagnosis is pericardial friction rub, but that does not occur until 24, 48 or even 72 hours after the attack. Usually in examining the heart immediately after the attack there is no characteristic palpatory nor auscultatory finding. The rhythm is regular for the most part. Ectopics may be noted but they are common in the type of individual who is subject to coronary occlusion. Heart block may occur and fibrillation, and occasionally ventricular tachycardia. As a rule these are not of any diagnostic moment. In the individual whose previous vascular findings are familiar or known to the physician an apex beat which, prior to the occlusion, was visible and palpable may not be seen nor felt. Very frequent murmurs which up to this time had been present will be noted as being absent. The heart sounds sometimes are muffled and a gallop rhythm is indicative of the struggle that the heart is making to carry on. The finding of pericardial friction rub sometimes determines a diagnosis which is *sub judice*. Unfortunately it is often extremely evanescent, lasting but a comparatively short time and may be missed. The pericardial friction rub occurs, of course, only if the area of infarction extends out to the epicardium.

Infarction Symptoms: The symptoms that

arise as result of infarction in a muscle anywhere are the same as those which take place when there is death of a localized area of muscle tissue in the heart. Infarction elsewhere, of course, is readily recognized. The occurrence of fever and leukocytosis which may go to 25,000 and which is in fairly direct relationship to the degree of infarction, are important findings in the diagnosis of the condition. Pericarditis directly due to infarction has been mentioned under physical signs. The embolic phenomena are dependent upon emboli from the area of infarction which may be sent to distant sections of the body. Thus it is by no means uncommon to find cerebral apoplexy some days or even weeks after the initial insult. Cardiac rupture is dependent upon the infarction of the muscle and it likewise is usually a relatively late development and may be the result of too active physical effort before healing has taken place.

Atypical Expressions: Coronary occlusion is by no means a simple diagnosis to make in some instances. Particularly to be borne in mind is that the milder attacks are often very questionable. Many, if not most, of the characteristic symptoms are lacking and heart pain may be the only outstanding feature—and it may not be particularly severe. The sudden occurrence of dyspnea, without any demonstrable cause, is an atypical expression of coronary occlusion in a few cases. The area of infarction involves frequently the interventricular septum and there may be thrombosis of the blood vessels on both sides of the heart. Every once in a while it happens that at autopsy it is found that the cause of death was cerebral vascular blocking dependent upon emboli carried to the brain from the heart, the seat of an unrecognized infarction, and once in a while acute pulmonary infarction may have the same cause. The first etiologic factor may not be appreciated during life; the latter is more generally diagnosed correctly. The surgeons should be particularly interested in the abdominal manifestations of coronary occlusion because they may mimic to a very high degree some acute intra-abdominal catastrophe. It hardly seems necessary to point out nowadays that the diagnosis of acute indigestion causing death is erroneous. People do not die of acute indigestion. In coronary disease sometimes there is nausea, vomiting and intense epigastric pain. More likely is it that the doctor will consider the acute abdominal pain plus nausea and vomiting as being due to such things as ruptured gastric ulcer, as being due to a gallbladder episode or even as being the result of acute pancreatitis than upon "acute indigestion." Many a patient has had an abdominal operation when the pathologic changes were above and not below the diaphragm. There is no one pathognomonic sign of the condition and the correct interpretation of symptoms depends upon close observation and study of the patient.

TREATMENT

As is the symptomatology characteristically divided into the symptoms of the attack, the heart and the infarction symptoms, so likewise may this division be used conveniently to indicate the line of treatment. Part of the treatment indirectly is symptomatic. Thus it is essential that pain be relieved and be relieved immediately. The pain throws extra work on the heart and it exaggerates the symptoms of shock. Therefore morphine should be administered at once if the diagnosis is unequivocal, and administered in doses sufficient to control the pain. Shock is combatted by the usual measures of heat, fluids and rest. If it is necessary to give stimulants, caffeine sodium benzoate should be given hypodermatically and should not be repeated unless absolutely necessary. Morphine is the sheet anchor directly after the attack. Cardiac symptoms should be controlled as much as possible by rest. The infarcted heart is a laboring heart and it should be kept quiet by rest and morphine. Cardiac stimulation is indicated in those patients who rapidly develop congestive failure. If cardiac stimulation is indicated, a drug should be given which will act promptly and whose effects will not be prolonged. To meet this requirement ouabaine in doses of 0.5 mg. to 1.0 mg. hypodermatically is probably the most satisfactory drug. Digitalis may have to be used but digitalis stimulates the heart muscle and for some time. The purpose of treatment is to keep the heart as quiet as possible and not make it do more work: This is absolutely essential. Rest is the third important adjutant to treatment of the heart and lastly oxygen in the cyanotic,

dyspneic patient is sometimes a life saver. Quinidine should be given within a few hours. Administration of quinidine is in part theoretic but it does decrease cardiac irritability and lessens conductivity so that sedative effects of this drug may prevent some of the mechanistic derangements developing which in turn may cause death. Ventricular fibrillation is an excellent example.

After a period of time if signs of failure develop or failure has not responded to rest and treatment, then digitalis may be started but, until the area of infarction is reasonably replaced by fibrous tissue, it is best to withold this drug.

Within a few days after the onset of occlusion it is advisable to start the use of the xanthine drugs of which aminophyllin has been more generally used probably than any other. Because theocalcin is less irritating to the stomach than other xanthine preparations, it may be used in doses of 0.1 gm. taking two or three tablets with each meal. This drug should be kept up indefinitely. Xanthine preparations increase coronary flow and presumably permit a more efficient coronary circulation than there would be were they not given. It is a good idea to keep up with one or another of these preparations for the remainder of the patient's life.

I have omitted any mention of the electrocardiogram deliberately, because the scope of this paper does not permit of discussion of this instrument of precision nor is it available for the most part to the average physician who first sees conditions of coronary occlusion. The electrocardiogram, suffice it to say, is of inestimable value when positive information is given but when it is negative its value is nil.

CONCLUSIONS

The impression should not be widespread that the diagnosis of coronary occlusion is always a simple matter. Atypical cases suffice to keep the physician from too great self-confidence in recognizing this disorder. In the immediate treatment of coronary occlusion the most definite and the first indication is cardiac and mental rest. The second, third, fourth and fifth indication is continuation of rest over a long period of time and then only a gradual return to the usual moderate physical activities of life.

THE SURGICAL TREATMENT OF CORONARY DISEASE

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The original disquisition of Heberden[1] concerning cardiac pain due to coronary artery disease first appeared in 1786, but this important disorder was not clearly recognized until relatively recently, when Herrick[2] made his first important contribution in 1912. It is indeed amazing that a disease of such vital significance and relatively frequent occurrence, particularly among physicians,[3] should be relegated to almost complete desuetude for over a century and a quarter. However, during the past quarter of a century intensive anatomic, physiologic, and experimental investigations have established a more elucidative comprehension of the fundamental background of the malady and a more rational therapeutic approach.

The present status of the surgical treatment of coronary artery disease and cardiac pain involves a consideration of three main methods of attack: (1) the sympathetic nervous systen; (2) the thyroid, and (3) the development of a collateral blood supply to the heart.

SYMPATHETIC NERVOUS SYSTEM

The rationale of the surgical procedures which attack the sympathetic nervous system is based upon an interruption of cardiosensory and motor pathways. The first successful clinical application of sympathectomy was based upon the physiologic speculations of Francois Franck,[4] in 1899, and first clinically tested by Jonnesco[5] in 1916, in a case of angina pectoris. The brilliance of this first successful result which stimulated universal interest was soon dimmed by many disappointing failures in the hands of other surgeons. As a consequence, various modifications were advocated and divergent theories proposed, which only added to the already existing bewilderment. In order to explain the inconsistent results and better understand the rationale upon which this method of surgical attack is based, it is necessary to review the underlying anato-

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mical and physiological principles in the light of recent investigations.

The presence of typical somatic afferent fibers in the sympathetic cardiac rami is now definitely established. The histologic characteristics of these fibers have been excellently described by Ranson and Billingsley,[6] and Stohr,[7] and corroborated by Heinbecker.[8] Whereas these fibers utilize the sympathetic pathways to the heart to transmit afferent impulses from this organ to the central connection, actually they are true somatic afferent fibers and not a real part of the autonomic nervous system. The neurones to these sensory nerve endings converge in the periarterial plexus of the coronary arteries, traverse the superficial and deep cardiac plexuses, and course in the middle and inferior cardiac nerves which join the corresponding cervical ganglia of the sympathetic chain. They then descend the sympathetic cervical chain to the upper thoracic ganglia, and finally reach their cells in the spinal ganglia by passing through the white rami communicantes into the central portions of the first thoracic and upper four or five intercostal nerves. Brauecker[9] and Ionesco and Enachesco[10] have recently demonstrated that there also exist thoracic cardiac nerves which run directly across the posterior mediastinum to the upper thoracic sympathetic ganglia. According to Ranson and Billingsley,[6] the only purely motor pathway is the superior cardiac nerve. The recent experimental investigations of White, Atkins, and Garrey[11] have further corroborated this concept of the cardiosensory pathways. Thus, it can be readily observed, and this should be particularly emphasized because of its technical importance, that all of the sensory pathways from the heart converge on the upper four or five thoracic sympathetic ganglia.

The vasomotor afferent or accelerator impulses to the heart and coronary arteries differ from the sensory in that they travel in the true sympathetic neurones. Langley[12] demonstrated that accelerator impulses leave the cord by the upper five thoracic pairs of anterior route and white communicating rami. He further assumes that their transmission occurred by afferent fibers which traveled upward in the sympathetic chain to synapse in the three cervical sympathetic ganglia and send their postganglionic neurones to the heart through the cervical cardiac nerves. Aside from these well established cervical cardiac nerves there also exist the thoracic cardiac nerves which form direct motor pathways between the upper four or five thoracic ganglia and the heart.[9, 10, 11, 13, 14]

There is still considerable controversy as regards the nervous control of the coronary circulation and the experimental evidence seems merely to aid in the confusion. The opinion held by one group of investigators[15, 18] is that vasoconstrictor fibers occur chiefly in the vagus and vasodilators in the sympathetic nerves. On the other hand, Leriche and his co-workers[19, 20] are of the opinion that the innervation of the coronaries follows the general law of vasomotor innervation; that is, that coronary constriction is mediated by the sympathetics.

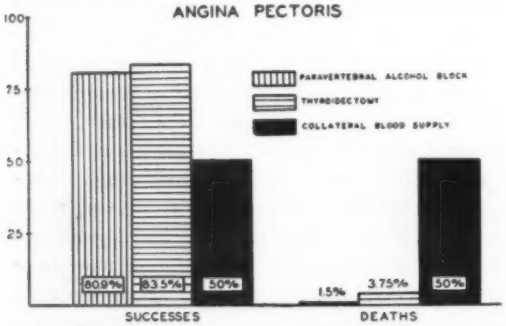
Since Jonnesco's[5] original operation of removing the entire cervical sympathetic chain, including the stellate ganglion, a number of operations have been advocated on the cervical sympathetics, based upon divergent rationales with varying degrees of success. Coffey and Brown[21] advocated simplifying the procedure to extirpation of the superior cervical sympathetic ganglion or cutting the cardiac branches of this ganglion. Although Kerr[22] is still an enthusiastic advocate of this procedure, it is difficult to explain the good results claimed by these authors in the light of recent investigations. Because Danielopolu[23] contends that accelerator and dilator impulses pass through the stellate ganglion, he strongly condemns its removal and recommends that the cervical sympathetic chain be sectioned above it, that the vertebral nerve be also severed as well as the depressor nerve of Hofer or any corresponding nerve present, and the nerves which spring from the cervical sympathetic chain above the superior cervical ganglia and course to the heart. Whereas Leriche[24] originally conformed to this view, more recently he[25, 26] advocates stellate ganglionectomy. Although other modifications have been suggested, in the main, the attack has been upon the cervical sympathetic chain and the stellate ganglion.

RESULTS

The results of these various procedures have been excellently summarized by Leriche and Fontaine[27, 28] in a collected series of 172 cases

including their own. Of 163 cases in this group in which the results were known, 85, or 52.5 per cent, obtained good results, 33, or 20.2 per cent, showed some improvement, 21, or 12.9 per cent, showed failures, and 24, or 14.7 per cent died. Thus, a little over 70 per cent will show some improvement to a greater or lesser extent. The recent anatomic and experimental investigations discussed above clearly reveal the explanation for the inconsistent results of cervical sympathectomy and the fact that better results are not obtained. Obviously, unless the accessory pathways through the thoracic cardiac nerves are interrupted, cervical sympathectomy alone is doomed to failure in a large number of instances.

Although the ideal procedure would be resection of the upper four or five thoracic sympathetic ganglia, because in this way all fibers carrying sensory impulses from the heart would be interrupted, such a procedure in patients who are admittedly poor risks would undoubtedly carry an unjustifiably high mortality. However, this difficulty has been obviated by the method of Mandl[29] which consists of the paravertebral alcohol injection of the thoracic sympathetic ganglia. In this country, Swetlow[30] was the first to advocate paravertebral alcohol block for cardiac pain and to describe the technic in detail. More recently, Mixter and White[31, 32] have perfected the technic and placed it upon a more rational basis. The combined results of paravertebral alcohol injection for angina pectoris in 38 cases reported by White[33] and 30 cases reported by Marvin [34] are illustrated in graph 1. It will be observed that successful results were obtained in 80.9 per cent, failures in 17.6 per cent, and fatalities in 1.5 per cent. A comparison of these results with those of cervical thoracic sympathectomy emphasizes more strongly the advantages of the former procedure. There is a higher percentage of successful results, and the mortality is considerably lower. Another advantage is the simplicity of performance, which of course makes it a procedure attended with little or no danger, particularly in those patients who are obviously poor risks. However, a fair, critical analysis of the procedure must not fail to mention a few of its disadvantages. Fortunately, these are not very significant. The effect of the alcohol is not permanent and in some instances will necessitate re-injection. The fact that it is a procedure employing the blind injection of a destructive solution will in some cases produce certain complications. The difficulties of limiting the effect of the injected alcohol will occasionally produce a painful neuritis, and pleural injury is a constant hazard.



Graph 1. Comparison of three methods of treatment in coronary artery disease and cardiac pain. The figures on paravertebral alcohol block are those tabulated by White[33] and Marvin[34] on a series of 68 cases; those on thyroidectomy are the results obtained in a collected series reported by Parsons and Purks[48] and the results on collateral blood supply were reported by Beck[38].

TECHNIC OF PARAVERTEBRAL ALCOHOL INJECTION

The technic of paravertebral alcohol injection as described by White[33] is relatively simple. He

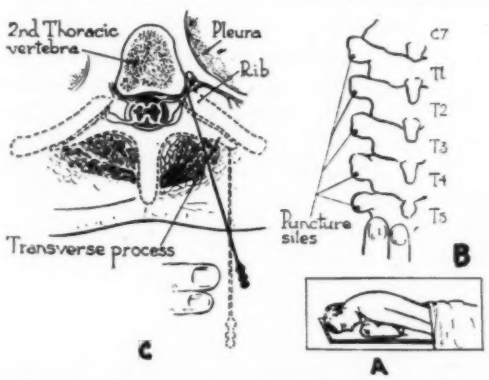


Fig. 1. Diagrammatic representation of technic of paravertebral alcohol injection. (A). Patient lying in prone position with pillow supporting chest so as to produce hyperflexion of neck. (B). Puncture sites are on a horizontal line approximately two to two and a half fingerbreadths lateral to spinous processes of the seventh cervical to fifth thoracic vertebrae, inclusive. (C). Dotted needle indicates first position with point touching transverse process or angle of rib. Needle in bold type indicates final correct position, which is approximately two fingerbreadths deeper than first position and directed medially towards midline about 20 degrees. Point of needle is in contact with lateral aspect of body of vertebra immediately adjacent to sympathetic ganglia and chain.

prefers to have the patient lying on his side with the knees drawn up, the shoulder at the edge of the bed, and the head deflected forward as in performing a spinal puncture. In our own experience it has been found more desirable to have the patient lying face downward with the chest supported by pillows, as shown in figure 1A. The bony landmarks consist of the spinous process, of the seventh cervical vertebra, and the first to the fifth thoracic inclusive. In this region, the spinous processes are imbricated like shingles on a roof, and the tip of each one of these spinous processes lies at an exact horizontal level of the transverse process and the posterior angle of the rib next below, and as shown in figure 1B, the highest prominent vertebral spine, the seventh cervical, marks the level of the first rib. By means of a fine hypodermic needle an intracutaneous wheal of novocaine is formed at the points of injection. These are made from 3½ to 4 cm. lateral to the spinous processes. This is approximately two to two and a half fingerbreadths (fig. 1 B). The points so marked lie opposite the seventh cervical and the upper three thoracic spines. Needles 8 to 10 cm. in length are then inserted at these points perpendicular to the surface of the back and at a depth varying from 3 to 3½ cm. to touch the upper four transverse processes. The needles are then inclined slightly in a caudal direction so as to slip beneath the transverse process or the angle of the rib, directed medially about 20 degrees towards the midline, and inserted deeper for about 3 cm., or approximately two fingerbreadths (fig.1 C). At this depth bone is usually touched, indicating that the needle is in contact with the lateral aspect of the body of the vertebra. At this stage aspiration should always be done in order to determine whether the needles lie in a blood vessel or the subarachnoid space. Obviously, if blood or spinal fluid is aspirated then the position of the needles must be changed. When the needles have been placed in the correct position, 2 c.c. of 3 per cent novocaine adrenalin solution should be injected in each. Within a period of fifteen minutes anesthesia should appear in the axilla, a short distance down the inner surface of the arm, and over the third and fourth ribs. A well defined Horner's syndrome and anhydrosis of the entire arm and the side of the neck and head should be present. The failure of these signs to develop indicates that the needles have not been correctly inserted, and a re-insertion should be done. After it has been determined accurately that the needles have been properly placed, it is preferable to inject 3 c.c. more of novocaine through each in order to secure widespread anesthesia and to make the final injection of alcohol painless. Three to four cubic centimeters of 95 per cent alcohol is then slowly injected in each needle.

THE THYROID

Whereas the relationship between thyroid activity and cardiac disease has been implicit in the expositions of numerous authors for over a century and a half, it was not until relatively recently that total thyroidectomy in the treatment of chronic non-thyrogenous heart disease has been placed upon a rational basis. The rationale of total thyroidectomy in the treatment of cardiac disease is based upon two factors: first, a decrease in tissue metabolism consequent to the removal of thyroid secretion, and second, an interruption of cardiosensory impulses which is coincident to the operative removal of the thyroid and depends upon the anatomic relationship of the cervical cardiac to the thyroid glands.

In the normal individual the speed of blood flow has been shown by Blumgart and Weiss[35] to be directly dependent upon the metabolic demands of the body. It is now a well established fact that hyperactivity of the thyroid gland results in increase in tissue metabolism, and conversely, hyposecretion of the thyroid gland produces a diminished tissue metabolism. Blumgart and his co-workers[36, 37] showed that in thyrotoxicosis not associated with cardiac disease there was a commensurable increase in speed of blood flow, and conversely, in uncomplicated myxedema there was a considerable decrease in speed of blood flow. It is further observed that in cardiac insufficiency and in angina pectoris this normal relationship between speed of blood flow and metabolism no longer exists. Because it appears that in cardiac disease the heart is unable to meet the metabolic demands of the tissues, it seems reasonable to assume that this situation should be relieved best by

simply correspondingly diminishing these metabolic demands. This could readily be done by removing the thyroid which so influences tissue metabolism.

The mechanism of relief of pain immediately after total thyroidectomy is still controversial. Blumgart and Berlin[38] are of the opinion that this early relief from pain is the result of a coincidental division of cardiosensory fibers at the time of operation. The anatomic and clinical investigations of Weinstein and his co-workers[39, 40] have further corroborated this concept. On the other hand, Levine and his associates[41, 42] as the result of their studies on the altered sensitivity to epinephrine, are of the opinion that the relief of pain immediately following total thyroidectomy is due to a lessened sensitivity to epinephrine. Cutler and his associates[43, 44, 45] have offered experimental evidences of the truth of this view.

RESULTS

During the past four years since Cutler[46] and Berlin[47] independently performed the first ablation of a normal thyroid for heart disease, a large number of operations have been done and the results reported by numerous investigators with a consequent better understanding of the indications, limitations, and selection of cases. In an attempt to form a thorough evaluation of the procedure, Parsons and Purks[48] tabulated data on a large group of patients on whom the operation had been perfomed. The details were obtained from a fairly complete survey of the literature and from inquiries sent to various clinics throughout the country. Of 133 patients with angina pectoris on whom operation had been performed 71, or 55.46 per cent, showed excellent results, and 36, or 28.12 per cent, were moderately improved; 5, or 3.9 per cent, were slightly improved, and 15, or 4.5 per cent, were classed as failures. The operative mortality was 3.75 per cent (graph 1). These results correspond fairly closely with those reported by Weeks[49] in a somewhat similar tabulation of 100 patients on whom the operation had been done in twenty-six clinics. If the excellent results and moderately improved groups are considered together as satisfactory it will be observed that 83.58 per cent showed good results in the series reported by Parsons and Purks, and 91.4 per cent in those collected by Weeks. Thus, these statistics indicate that it is undeniably a distinctly valuable procedure in relieving cardiac pain. Whether the procedure prolongs life or not cannot be answered. It is admittedly a procedure attempting to relieve symptoms and not to affect cardiac pathology.

There are certain disadvantages of the procedure that must be considered in its proper evaluation. Total ablation of the thyroid is difficult in any type of case, and in those patients who are admittedly poor risks it will carry a very definite mortality. There will also be a fairly high incidence of complications. In the collected series reported by Parsons and Purks, recurrent laryngeal nerve injury occurred in 8.6 per cent and tetany in 10.3 per cent of the cases. Myxedema is also another disadvantage of the procedure. Whereas the undesirable consequences of artificially induced myxedema can be alleviated to some extent by the proper administration of thyroxin, it must be remembered in order to obtain the full benefit of the operation these individuals must be kept at a low basal metabolic rate. Adequate doses of thyroxin to obviate the effects of myxedema may cause the patient to suffer from angina and a reduction of thyroxin to relieve the angina may result in the ill effects of myxedema.

The criteria for the selection of these patients for operation have become better understood with increasing experience. Blumgart[50] advises against the operation in the presence of rapidly progressing cardiovascular disease, such as malignant hypertension or syphilitic cardiovascular disease. The operation is also contraindicated in the presence of a low preoperative basal metabolic rate. Mixter, Blumgart, and Berlin[51] hesitate to operate upon those patients in whom the preoperative basal metabolic rate is below 15 per cent and consider a basal metabolic rate of 20 per cent or more a definite contraindication to operation. The presence of a recent coronary occlusion and renal insufficiency, active infection, such as bronchiectasis, lung abscess and active rheumatic involvement, are further contraindications to operation.

TECHNIC OF TOTAL THYROIDECTOMY

Although no attempt will be made here to give a detailed technical discussion of total extirpa-

tion of the normal thyroid gland, there are certain aspects of the technic which demand consideration. The procedure is not one that can be undertaken lightly, and should never be performed by one who is not thoroughly familiar with the normal anatomy of the thyroid gland and its relationship to the surrounding structures, as well as the variations which may occur. The surgeons who have had greatest experience with the procedure advocate the use of local analgesia in preference to general anesthesia. Avoidance of injury to the recurrent larnygeal nerves and the parathyroid gland necessitates extreme care in dissection. Cutler et al.,[52] advise removing each lobe of the thyroid by working from that side of the patient because of the fact that in their first few cases they injured two left recurrent nerves while doing the procedure according to their previous method of operating entirely from the right side. We[53] have also made a similar observation and consider this a valuable suggestion.

COLLATERAL BLOOD SUPPLY

The development of a collateral circulation by the production of a new blood supply to the heart by grafting tissues to the myocardium as devised and advocated by Claude S. Beck[54] is an entirely new principle in the surgical treatment of coronary disease. The rationale of this procedure is based upon the attempt to correct the decreased myocardial vascularity which invariably occurs with coronary sclerosis. Because the compensatory circulatory mechanisms of the heart are dreadfully inadequate due to the peculiar anatomic arrangement of the vascular supply of the myocardium, it seems reasonable to assume that if other anastomotic channels to the heart could be surgically produced the previously inadequate compensatory mechanism might be changed into one that is adequate.

The apparent difficulties confronting this procedure were fully appreciated by Beck, but he states that there were two encouraging facts which seemed to indicate the feasibility of this method. Hudson et al[55] demonstrated the presence of blood vessels in the fat at the base of the heart anastomosing the coronary system with branches of the aorta, and Moritz, Hudson, and Orgain[56] established the existence of blood vessels in pericardial adhesions. Beck and his co-workers began an extensive series of experiments in 1932 which definitely established the possibility of deliberately producing anastomotic channels which could serve a functional purpose.

These investigators first produced a collateral vascular bed by destroying the mesothelial envelope around the heart by roughening the lining of the parietal pericardium and the epicardium. Various tissues, such as fibrous pericardium, pericardial fat, pedicle grafts of pectoral muscle and omentum, were used for the new vascular bed, and within three weeks anastomoses between the grafts and the heart could be demonstrated. This was established by the presence in the myocardium of a dye previously introduced by way of the graft and also by injecting a solution of barium sulphate into a coronary artery and tracing the location of the solution in the chest by roentgenograms[57]. In one group of experiments, it was found that the vascular graft could act as a protective measure against subsequent complete occlusion of one of the coronary arteries. They were also able to show that it was extremely important to maintain a uniform distribution of blood flow, and from their experiments they believe that a collateral vascular bed effects an equal distribution of blood flow to the myocardium by transporting blood from extracardiac sources into the myocardium and from one part of the heart where the circulation is good to another part of the heart where the circulation is deficient.

Encouraged by these successful experimental investigations, they performed the operation for the first time on a patient with coronary sclerosis on February 13, 1935. This patient was a white male laborer, 28 years of age, who had typical substernal pain of two years' duration and was finally forced to give up his work. The patient made an excellent recovery from the operation and for the past year has been employed as a gardener, doing the work of a man in good health. He has no pain and takes no drugs.

In his most recent communication, Beck[58] states he has performed the operation upon 16 patients with a mortality of 50 per cent. In justification of such a high mortality the author states that this was an extremely bad group of patients with advanced stages of coronary

sclerosis. They were patients who had previously concluded that they had nothing to risk because life without improvement was not worthwhile. However, the author is of the opinion that this frightfully high mortality can be reduced, first by a careful selection of patients who do not have a too far advanced coronary sclerosis, and second, by reducing the magnitude of the operation. He has already simplified the technic, and in the last five patients in whom this was done there were no operative deaths.

The technical procedure consists of grafting a part of the pectoral muscle upon the myocardium. The skin incision is made transversely over the precordia, and the pectoral muscles are separated from the chest wall by blunt dissection. The pectoral muscle is transected laterally about four inches from the sternum to make a graft with the pedicle attached along the sternal margin. The fifth and sixth costal cartilages are removed and the parietal pericardium is opened. By means of a burr, the lining of the pericardium and epicardium is roughened. More recently, he has employed powdered beef bone in the pericardial cavity for the purpose of producing a low grade foreign body reaction. The muscle graft is divided into two parts by incising parallel with its fibers along the lower margin of the third rib and the upper part of the graft is placed beneath the sternum to the right ventricle, while the lower is applied to the left ventricle. The pericardial cavity is then widely opened so that the adjacent vascularized tissues are in contact with the anterior aspect of the heart.

SUMMARY

The three main methods of attack in the surgical treatment of coronary artery disease and cardiac pain have been considered and discussed. Any attempt to compare the advantages and disadvantages of these three methods will meet with certain difficulties. However, their evaluation from the standpoint of successful results and mortality reveals that thyroidectomy has a slight advantage over paravertebral alcohol and both have a marked advantage over collateral blood supply. On the other hand, the mortality from paravertebral alcohol block is practically negligible, with thyroidectomy having a mortality two and a half times as high. The 50 per cent mortality in the collateral blood supply method limits its practicability (graph 1).

Because these three surgical methods of attack have different rational bases, and because coronary artery disease and cardiac pain varies in its pathologic physiology, it is possible that each method may be appropriately applied to certain groups of patients. A critical analysis of each method and its rationale and a correlation of this with the various types of coronary artery disease and pain suggest the possibility of certain indications for each method. Sympathectomy is probably best indicated in patients who are obviously poor risks. They are usually elderly individuals with marked sclerotic changes and fibrotic myocardial degeneration. They also included those patients who have very severe pain, or whose angina is particularly aggravated by emotional disturbance rather than by effort, and those whose basal metabolism is very low. Thyroidectomy is probably best indicated in patients who have a normal or high basal metabolic rate. They should be relatively good risks, and their angina should be one of effort rather than of emotion. The group of patients which is best suited for the collateral blood supply method should be individuals who have had a recent thrombosis, or show litttle evidence of arteriosclerosis or fibrotic muscular degenerative changes.

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THE PATHOLOGY OF CORONARY DISEASE

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The morphologic pathology of cardiovascular lesions, which was a subject of such lively interest twenty years ago, has been neglected recently and relegated to the background by the numerous functional, biochemical, and nervous theories of circulatory failure. This disregard of the structural changes in cardiac insufficiency is undoubtedly due to the frequent discrepancy between the severe clinical syndrome of heart failure terminating in death and the apparent lack of structural changes found in the heart at autopsy. Expressions such as "paradox myocardosis" (Hyman) or "essential myocardial insufficiency" (Messinger), which have been introduced to explain cardiac failure without cardiac pathology, are merely new terms and do not solve the important problem of correlating the morphologic and physiologic pathology of heart disease. In attempting to estimate from the autopsy findings the functional condition of the heart previous to death it must be considered that any accumulation of pathologic lesions is already proof of severe functional embarrassment of the entire organ. Conditions in the heart are entirely different from those found in other organs of the body, such as the liver, spleen, or kidney, where even extensive and permanent pathologic changes will not disturb the functional activity of the remaining healthy tissue. The morphologic changes in the heart in coronary disease lend support to this statement. Changes in the coronary arteries cause ischemia of circumscribed areas of the myocardium with severe degenerative or necrotic changes, and the destruction of even small parts of the heart muscle will have a deleterious effect upon the function of the entire heart.

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ETIOLOGY

Lesions in the coronary artery resulting in obstruction or narrowing of the lumen are chiefly caused by arteriosclerosis, syphilis, and mycotic or rheumatic infections. Of these three, arteriosclerosis is by far the most common etiologic factor in coronary disease. It may affect the vessels of the heart in the form of a patchy atheroma of the intima with formation of atheromatous ulcers and subsequent thrombi or in the form of diffuse hyperplastic sclerosis of the intima with narrowing of the lumen and considerable thickening of the wall. The third type of arteriosclerosis in the coronary arteries, the mediasclerosis of Moenckeberg, is rarely found. Diffuse hyperplastic sclerosis is undoubtedly the more benign form of arteriosclerosis (Benda) and rarely leads to occlusion of the larger branches of the coronaries but is responsible for gradual obliteration of smaller branches only. Atheromatosis which gives the intima of the arteries a yellow patchy appearance is especially common in older persons, and the perforation of the atheroma into the lumen of the vessel will cause thrombus formation with sudden occlusion of the lumen of the coronaries. The etiology is still unknown but seems to be linked in some way with a faulty cholesterine metabolism (Leary). Syphilis affects the circulation of the heart in two ways: Luetic mesaortitis at the root of the aorta may seal the mouths of the coronaries or intima-sclerosis over a focus of luetic mesarteritis of the coronary vessels may lead to narrowing and occlusion of the lumen. It is not uncommon for rheumatic or mycotic infections to produce an acute focal mesarteritis of the coronary vessels with intimal thickening and narrowing of the lumen (Kaufmann). Occasionally obstructions of the lumina of the vessels of the heart may be caused by emboli originating from a bacterial endocarditis or from a diseased aorta. Traumatic injury of the coronary vessels has been reported by Fraenkel.

Because of the overwhelming frequency of arteriosclerosis as the etiologic factor in coronary disease, the changes in the heart following narrowing or occlusion of the lumen of the coronary vessels are commonly discussed under the heading of arteriosclerotic heart disease.

INCIDENCE

In an analysis of 73,000 autopsy protocols of the larger pathologic institutes of Germany, Lucadou concludes that coronary thrombosis and coronary embolism are steadily increasing in number. In an analysis of 1200 unselected cases of structural heart disease, Gager and Dunn ascribed 26 per cent to coronary sclerosis. In White's compilation of data on the etiology of organic heart disease from New England, New York City, Virginia, Texas, Iowa, Minnesota, the Rocky Mountains, Oregon, England, and Norway, the incidence of coronary sclerosis varied between 10 and 43 per cent. In 5213 consecutive autopsies performed in the Charity Hospital of Louisiana at New Orleans from 1932 to 1935, 749 cases of fatal organic heart disease were recorded. In 165 (22 per cent) definite evidence of coronary disease with damage of the myocardium was found at autopsy. In 41 patients death occurred immediately or shortly after occlusion of a larger branch of the coronary vessel. These figures are slightly lower than those of Barnes and Ball from the Mayo Clinic, who found 4.9 per cent coronary disease in 1000 consecutive postmortem examinations.

Sex, race, and age are considered factors of great influence in the incidence and distribution of arteriosclerotic heart disease and reflect the importance of constitutional factors in the etiology of coronary lesions. The consensus of opinion at the present time is that coronary disease is more common in the male than the female, in the white than the colored race, and that its maximum frequency occurs in persons oved 50 years of age. My study, as shown in the following table, supports this belief.

TABLE I

	Race		Sex		Age	
	White	Colored	Male	Female	Below 50	Above 50
Type of Disease	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent
I. Fatal organic heart disease	39.3	60.7	68.7	31.3	43.8	56.2
II. Arteriosclerotic heart disease	50.3	49.7	73.9	26.1	18.8	81.2
III. Deaths from coronary occlusion	70.7	29.3	76.2	23.8	24.3	75.7

Group I of the table lists all cases of fatal organic heart disease recorded in 5213 consecutive autopsies. In this group the high incidence in the colored race is explained by the large number of cases of syphilitic cardiovascular disease encountered amongst the colored patients of the hospital. The same factor is also largely responsible for the large number of persons who succumbed to heart failure below the age of fifty.

Group II includes all cases in which a diagnosis of coronary disease was made at autopsy. A predominance of males and persons over fifty years of age is noticeable. Both races are about equally represented in this group.

Those cases in which recent occlusion of a larger branch of the coronary vessels was directly responsible for the death of the individual are separated from the total number of cases of arteriosclerotic heart disease and are listed in group III. Although I agree with White that such a separation, particularly from the pathologic point of view, is rather artificial, I have felt this subdivision to be justified by the striking and important clinical picture of coronary occlusion. Although the incidence according to sex and age is about the same as in group II, I noted a marked difference in the distribution according to race, 70.7 per cent of all cases having occurred in white individuals. The principal reason for this predominance in the white race is the fact that coronary thrombosis secondary to coronary sclerosis is rare in the colored race. Hansmann and Schenken suggest that the racial response of the fibroblastic tissue in the intima of the coronary arteries towards atheromatous material is responsible for this difference. Gross and microscopic examinations of the vessels in negroes with arteriosclerosis revealed deeper lying atheromatous plaques with greater subendothelial tissue proliferation, a decreased incidence of atheromatous ulcers, and a greater involvement of the media by the atheromatous process, resulting in localized dilatation of the vessels which appeared to aid temporarily in the maintenance of adequate patency. Although rare, coronary thrombosis does occur in the negro race, and statements to the contrary which appear in the clinical literature are erroneous.

GROSS PATHOLOGY

The morphologic changes in the heart with coronary disease depend upon the size of the vessel. Obstruction of both coronary arteries will cause instantaneous death without any noticeable morphologic changes. Occlusion of a larger branch of the coronary vessels will produce an infarction of the myocardium. In such cases the patient does not usually die immediately but lingers for several hours or several days, depending upon the size of the infarct. At autopsy the pericardium over the infarcted area shows a slight amount of fibrinous exudate and congestion. The myocardium reveals a recent infarction characterized by a pale clay colored area with an irregular border. This border is sometimes dark red due to the hemorrhage which occurs at the edge of the infarct. The consistency of the recent infarct is usually firm. After several days the color and the consistency of the infarct undergo characteristic changes which are caused by the autolytic processes in the necrotic area, and by the organization of the infarct. Softening of the ischemic heart muscle or myomalacia frequently causes death shortly after the coronary attack due to liquefaction necrosis of the infarcted myocardium. The immigration of leukocytes and the deposits of fat in and around the zone of infarction give this area the characteristic yellowish appearance which it maintains until organization of the infarct takes place. The end-product of this process is represented by a myocardial scar which is first pink, then white in color. Infarcts of the heart often show certain sites of predilection, occurring more frequently in the myocardium of the ventricles than in the auricles, and more frequently in the left than in the right ventricle. The lower third portion of the anterior wall of the left ventricle, the upper part of the posterior wall, and the papillary muscles of the left heart are the most frequent locations. If the infarction involves part of the endocardium, a mural thrombus will form over the necrotic area and further endanger the life of the patient. More extensive destruction of the heart muscle will lead to the formation of large fibrous plaques which may become calcified. When such an area of myocardial fibrosis is bulged outward by the pressure of blood, it forms an aneurysm of the heart, sometimes causing sudden death by rupture into the pericardial cavity (acute heart aneurysm). The place of predilection for the formation of heart aneurysms is likewise the anterior wall of the left ventricle and the apex of the heart.

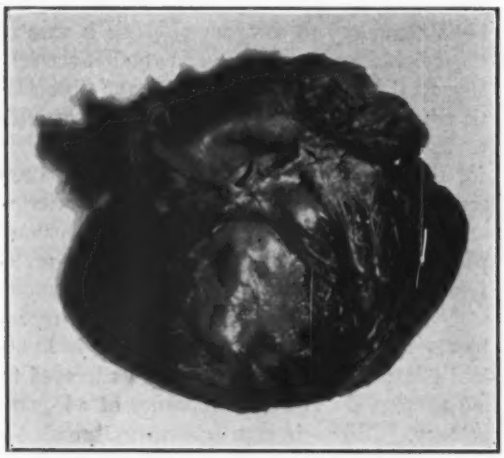

Fig. 1. Extensive fibrosis of the myocardium in a heart with occlusion of a branch of the coronary arteries.

In the differential diagnosis of arteriosclerotic heart disease against other injuries of the heart muscle leading to similar fibrosis of the myocardium, the clinical history of the patient is often indispensable. In many instances it will be impossible to recognize the etiologic factor of the scar formation since the coronary vessels and the myocardium may be equally damaged by the injurious agent, as for example in syphilis.

In the correlation of the gross pathologic lesions with the clinical symptoms of the disease, it must be remembered that the latter are very changeable. Extensive infarction of the heart may produce no clinical symptoms till sudden death occurs, while on the other hand, small scarcely noticeable infarcts may produce severe suffering. The presence of spastic contraction of the vessels with brief but extremely severe ischemic pains in the heart region may explain those "heart attacks" which occur without evidence of demonstrable myocardial lesions.

HISTOPATHOLOGY

Microscopic evidence of arteriosclerotic heart disease, which is much more frequently present

as grossly visible myocardial scars, can be divided into two groups: Changes caused by insufficient blood supply due to narrowing of the lumen of the coronary vessels and changes resulting from complete lack of blood supply due to obstruction of the lumen. The consequence of insufficient blood supply to the cells of the heart muscle is a series of degenerative processes, the severest degree of which is fatty degeneration. The latter can be taken as a sign of irreparable damage to the muscle cells and is most frequently observed in the papillary muscle bundles which have a poorly developed network of anastomosis. Because of the continuous motion of the muscle cells, fat droplets within the plasma are very finely emulsified and cannot be seen in the usual hematoxylin eosin preparation. With the Sudan stain, however, a surprising picture is often obtained showing an extensive amount of fat in the muscle cells. Although found very frequently in chronic coronary disease, fatty degeneration of the myocardium can also be produced by toxic, infectious, and metabolic processes affecting the heart and the differential diagnosis as to the etiologic factor responsible for the lesion is often difficult. Parenchymatous degeneration represents a less severe degree of damage to the myocardial cells, and restoration to normal is possible. Hyalinized muscle fibers are soon broken up and removed by phagocytosis. The final result of repeated and severe degenerative changes is the destruction of a large number of muscle cells, which will be replaced by fibrous tissue. Thus a rather diffuse and usually not very severe fibrosis of the myocardium is produced similar to the end-stages of toxic or infectious myocarditis. Study of the smaller vessels of the heart and consideration of the clinical history and the age of the patient make it often possible to recognize the true etiologic factor.

When the circulation in a circumscribed area of the myocardium is suddenly cut off, a massive necrosis of the muscle fibers is produced. The development of the histologic picture in cases of infarcts of the heart depends largely upon the interval which has elapsed between the time of the infarction and the examination of the specimen. Very recent infarcts show coagulation necrosis with the shape of the single muscle fibers well preserved but with loss of the staining property of the nucleus. If the patient dies a few hours after the infarction occurs, diffuse hemorrhage between the necrotic muscle fibers, the result of the sudden cessation of the capillary blood pressure in the necrotic area, is usually noticed. If the patient dies days after the infarction, liquefaction necrosis has led to complete destruction of the normal histologic picture, and signs of reparative inflammation become evident. An invasion of the necrotic tissue by polymorphonuclear leukocytes takes place which is sometimes so severe that sterile abscesses are formed. "The dead muscle is gradually removed and replaced, first by an open granulation tissue rich in vesvels, and later by fully formed scar tissue which may seriously interfere with the efficiency of the heart" (Boyd). The scar is always smaller than the actual infarct and consists of a very collagenous fibrous tissue which includes a certain amount of elastic fibers. At the margin of the scar tissue, brown pigment giving a strong iron reaction is derived from the blood pigment deposited in the heart muscle by the hemorrhages into the infarcted area. Calcium can be found in many large scars and sometimes the Sudan stain will reveal a considerable amount of fat. The microscopic evidence of coronary occlusion is rather typical, and the diagnosis of this condition can be made even though the occluded vessels cannot be found at autopsy. Other conditions which can produce a similar picture, syphilis and circumscribed focal myocarditis, are so rare in comparison to coronary arteriosclerosis that they need not be seriously considered. The pericardium as well as the endocardium, if involved in the infarction, will show the same histologic picture that is present in the myocardium with the formation of pericarditic adhesions, fibrosis of the endocardium, or the formation of a partly organized mural thrombus.

The possibility of estimating the age of the infarcts by histopathologic study is limited. It is sometimes equally difficult to decide whether an infarction of the myocardium was directly responsible for the death of the individual. Restitution of the infarcted area will be impossible and the loss of muscle tissue will be permanent, since probably no regeneration of myo-

cardial cells occurs. However, there will be a hypertrophy of the heart muscle fibers surrounding the necrotic area either due to a true compensatory phenomenon or to hypertrophy caused by the active hyperemia prevailing during the organization of the infarct. This partial and irregular hypertrophy of the heart muscle may not be grossly noticeable and may not increase the weight of the heart. It should not be confused with the myocardial changes of hypertensive heart disease which is very often combined with coronary diseases of the heart.

SUMMARY

1. In 5213 consecutive autopsies at the Charity Hospital of Louisiana at New Orleans, 749 cases of fatal organic heart disease were encountered. In 165 cases (22 per cent), evidence of arteriosclerotic heart disease was found at the autopsy. In 41 cases (5.4 per cent) death was due to coronary occlusion.

2. The essential gross pathologic findings in a heart with coronary disease are infarction and fibrosis of the myocardium with the formation of a heart aneurysm and leading to chronic congestive heart failure.

3. Microscopically, when a narrowing of the lumen of the vessel has occurred, degenerative changes prevail, but in instances of complete arterial obstruction, necrosis of the myocardium can be observed. In patients surviving the acute attack of infarction, organization of the necrotic area leads to the formation of a myocardial scar with regional hypertrophy of the surrounding heart muscle fibers.

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ON THE OCCASION OF THE NAMING OF THE RUDOLPH MATAS MEDICAL LIBRARY*

ADDRESS

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Records of medical knowledge, medical literature, have been accumulating for thousands of years. During much of this period, decadence of civilizations was usually accompanied by almost complete disappearance of all record of the medical knowledge of the time. It is only during the past four hundred years that the writings of the master minds in medicine have survived the ravages of time or the wanton destruction of conquerors and the devitalizing effect upon civilizations, of wars, disease and pestilence.

How different now. A new discovery today is recorded within the space of a few hours, days or weeks, according to its nature and importance, in the medical literature of every land. There is no chance for it ever to be entirely lost to civilization, except for the civization itself, of the entire world, to disappear.

Up to about sixty years ago, the medical literature consisted chiefly of books of one kind or another, together with older forms of printed or still older frail and fragile written records, incunnabula, manuscripts, tablets. During this later period of rapid advances in medical knowledge, books—textbooks, monographs, treatises and systems—have appeared in greater and greater numbers and volume until now the medical library must count such books in the thousands and the tens of thousands. Medical progress is so rapid these days that most of such books are already out of date before they are off the press. New editions are brought out in rapid succession, with the idea of keeping them up to date. But, many of these are

*Exercises held November 29, 1937 in the Hutchinson Memorial Building, New Orleans.

little more than repetitions of the errors, misinterpretations and distortions contained in former editions.

The medical library furnishes the most complete, if not the only possible, record of the experiences of the medical profession, and the textbooks are abstracts of this experience. Unfortunately, these abstracts are incomplete and are colored by the idiosyncrasies and mental attitudes of the authors or editors. Consultation of several textbooks on the same subject helps one to avoid the danger of being misled as much as he would be if he consulted only one. But all too often one textbook after another has copied and passed on the erroneous ideas and misinterpretations placed upon the original observations by former compilers. Consultation of the original material, as found only in the medical library, is the only way by which one can orient the cyclopedic and the textbook view and reduce his horizon to the proper perspective.

Great change has occurred in the form and other characters of medical literature during the past one hundred years; most of it during the past fifty years. As medical knowledge has progressed, there has been a successive splitting off, from both pre-clinical and clinical departments, of new branches or groups, many of which have attained sufficient strength, importance and dignity to be recognized as special fields. They have come to have their own societies, separate journals of publication and, in some instances, a scientific lingo of their own. The number of medical periodicals, both general and special, has been growing by leaps and bounds until there is now a total of several thousand in the many languages of the world.

Records of the past, such as may be supplied in books, are of inestimable value, but a medical library must also be a contemporary and a periodical library. The present is even more valuable than the past. If we were suddenly deprived of the knowledge acquired during the last fifty, twenty-five or even ten years, what a difference it would make in the medicine of today.

This kind of living, active, rapidly increasing knowledge is ephemeral; its seeds germinate in new discoveries the next day after they are planted. The periodical literature—the weekly, the monthly and the other less frequently appearing periodicals—record and supply this knowledge as it is discovered. To be sure, there is a great amount of chaff and trash in this enormous volume of periodical literature, but it is for the student to learn cautiously, carefully and with an open mind, to pick out the grains of truth from the mass and make practical application of them to his problems. One who learns to do this profits in untold measure. One who blindly accepts it all or rejects it all, might as well never read. He is hopeless in any case.

Medical periodicals must be bound and kept in order for easy access. The usefulness of a general medical library is determined, in large measure, not only by the number of current periodicals, but also by the completeness of the files of these publications and their accessibility. The shelves of the reading rooms must carry bound volumes of the periodicals of the last few years. Previous volumes, from the first number, if possible, should be within easy access in the stack rooms.

The current periodical medical literature has now become so numerous and so voluminous, until it could hardly be used, if it were not for another library facility that has been developed and brought to a high state of perfection contemporaneously, the medical index. The completion of the first series, through the alphabet, of the Index Catalogue of the Surgeon General's Library in Washington, under the able guidance of John Shaw Billings, constituted one of the greatest and most far-reaching contributions to medicine that it is ever the lot of any man to make. Not only the wealth of references in this first series but that in those which have followed, have provided the medical research worker with a most extensive and comprehensive reference index to the medical literature of the world. It is limited in its usefulness, however, for some purposes, by the system of rotation, over a period of years, through the letters of the alphabet, resulting in long delay in the publication of some of the titles.

The Quarterly Cumulative Index Medicus, first started in 1879, as the Index Medicus, and in 1916 as the Quarterly Cumulative Index, the two being combined in 1927 under the present title, has been brought to a high state of per-

fection and simplicity, and now provides a ready, up-to-the-minute index of current medical literature that is sufficiently extensive to meet most needs. With this index and access to a good medical library, looking up the recent literature on a given subject is so easy that it may be called a "lazy man's job". It is all right there, in convenient form and order, for the asking and the reading.

But this "lazy man's job" has become more of a real job again during the past decade or a little longer, despite the Quarterly Index, because so many of the discoveries and advances in medicine have come through other related fields of science, the literature of which is covered only partially or in special instances by the medical index. Medicine is rapidly becoming more dependent upon, and more closely related to, the other sciences of biology, chemistry, physics, psychology and sociology. And these all have literatures of their own, with much of which the medical profession must now keep in touch.

The medical library is an essential part of the educational features of every community, the medical culture of which it determines, to a large extent. It contains the record of the efforts, ideas, hopes and fears of all medical men in the world and is a powerful engine of medical education and culture. A good medical library helps to elevate the standards of the medical profession, to improve medical practice, to enrich the teaching of medical students, to promote research and discovery, and through all these, contributes to the health-welfare of the community as a whole.

Diligent and intelligent use of the library promotes medical modesty, caution, close observation, accurate notation and a critical judgment of our senses. The best protection against avoidable mistakes, waste and duplication of effort is knowledge of what others have discovered and this is to be found only in the literature in the library. Familiarity with the past tends to induce a becoming and amiable modesty in medical men of the present.

Methods of medical education have changed greatly during the past three decades, largely as a result of the rapid advances in medical knowledge and the growth and organization of medical literature in the library. Within the memory of many of us here, the course in the medical school consisted chiefly of lectures by the professors, who presumed to present, in these lectures, all that the student needed to learn in the particular department. Too often these lectures were taken almost completely, and sometimes verbatim, from some standard textbook which the student could have read just as well, at his leisure, if he had been taught to do so. Now the didactic lecture is allotted only a small place in the medical curriculum.

The dissecting room was the only laboratory in which the student did any real worthwhile laboratory work. Now laboratory training and experience is an important part of the course in nearly every department.

Bedside instruction was limited. Now the student spends much of his time in contact with, and particularly in the actual care of, patients in the hospital and clinic.

The library contained only a meager collection of books and publications. Students hardly knew where the library was, much less how to use it. Now the student spends much of his time in the library, where he has access to a great wealth of literature in many different fields of medicine. He not only knows where it is but he knows how to use it.

Lewellys Barker once well said "Education of a student in the use of the medical literature is far more important than supplying him with large amounts of information derived from that literature." The best way to educate the student in the use of the literature is through practical experience in the library, the only place where the literature is to be found.

Without the library facilities here, how different medical education, medical research and medical practice in New Orleans would be. Here in one repository, in comfortable quarters, under an able, efficient and willing staff, are more than 50,000 books and bound volumes and more than 500 current medical periodicals, at the beck and call of every medical student and every medical man or woman who wishes to use them. Here the physician or student can present his questions on any subject to the authorities of the world, past and present, and receive back their answers as quickly as he can read them.

The best remedy for the "blues" and the

best way to forget discouragement about the progress of medicine, that I know, is to peep into the reading rooms of the library, as I have done often, and see twenty-five, fifty and more students, teachers and physicians of the community there working and storing up in their own minds and souls the knowledge and thoughts so bountifully gathered there for them; or to arrive early on a Monday morning and see on the receiving tables, the loads of books and material which were taken out for use over the week-end. It gives me a real thrill and a boost of spirits every time I see it.

HISTORY OF LIBRARY

What of the history of the development of this important institution which we now designate the Rudolph Matas Medical Library? I can give here only some of the high points and general information. It remains for others who are better informed and who have the ability to do so, to present a more complete and detailed record.

As far back as 1843 there were in the medical school building of the University of Louisiana, which later (in 1884) became the Tulane University of Louisiana, two small rooms for a library and reading room.

When the University started operation again in 1866, after a brief suspension during the Civil War, a few scattered old books, uncatalogued and unindexed, were assembled in a reading room which was established for students and professors in the east wing of the medical building.

The new building for the medical school, the Richardson Memorial, on Canal street, was completed in 1893. In it, for the first time, was provision made for the long needed space for the medical library.

In the summer of 1896, Dean Chaillé, with the assistance of his secretary, Mr. Oswald Belfield, and John A. Bacon, undertook the first organization and systematic arranging of the miscellaneous material at hand. This consisted mostly of books donated by members of the faculty or others and some old atlases that had been handed down from long years before. It is likely that some of this material was purchased out of the special appropriation of the state legislature of $25,000 in 1850 and $6,000 more in 1853, for the purchase of material for a museum. In 1903, $2,000 was spent by the University for books and improvements in the library. Many of the old books in the present large collection still bear the original old labels in the handwriting either of Dr. Chaillé or of Mr. Belfield, whose writing only an expert could tell from Dr. Chaillé's.

After the chaotic material had been assembled, shelved and arranged in the library room in 1896, under the direction of Dr. Chaillé, a student was employed, during the sessions, to keep it open from 3 to 5 o'clock. This was continued until in 1906, when Miss Jane Grey Rogers was appointed as Librarian and went faithfully and tirelessly at the task of cataloguing and indexing, according to medical library usage, the mass of medical literature representing the haphazard accumulation of some sixty years. She supervised, unaided, its use and circulation to students and faculty until 1926, when an assistant (Mrs. Lucille S. Brown) was provided.

In 1920, the domicile and library of the Orleans Parish Medical Society was moved to the Medical School building, then the Hutchinson Memorial and that same year Miss Mary Louise Marshall was employed by the Society as Assistant Librarian on a full time basis.

In 1928, an agreement was made between the School and the Society for the technical administration of the two libraries jointly. Miss Marshall was appointed also as Librarian of the Tulane Medical Library, thus making her acting head of both, which position she still occupies. All credit should go to her and her staff of able assistants for the present splendid organization of the large amount of library material under their care and the efficient and courteous manner in which they facilitate its use.

When the new Hutchinson Memorial was erected in 1930, space was provided for the domicile of the Orleans Parish Medical Society and the State Medical Society, the organized medical profession of the community, on the first floor, and for care of the Society's library, jointly with our own, on the second floor, with a view to a continuation of the joint technical administration which, to this date, has been most satisfactory and beneficial to all concerned. If

anybody should ever undertake to break up this cooperative pooling of the medical library resources of this community, he will be so severely condemned by his own conscience that he will surely have to desist from such an attack upon the best interests of the entire medical profession.

The number of bound volumes in the library, which will be known hereafter as the Rudolph Matas Medical Library, has grown from about 3,000 in 1900 to 30,168 on November 1, 1937. In addition, 350 current periodicals are received.

There are several special collections among which should be mentioned the Feingold Collection on the eye and its diseases, which is invaluable, not only to students but also to specialists in that field, some of whom come from far and wide for research and study; the Kells Collection on dentistry, which is more useful to members of the dental profession and of the medical profession in their closely related problems; the Lemann Collection on diabetes, established in honor of the late Dr. I. I. Lemann, a pioneer in the study of that disease and a leader in the broad field of internal medicine. He served as Chairman of the Library Committee for several years. His love and devotion to medical education and medical culture, his scholarly attainments and his active participation in the affairs of the University enabled him to appreciate, more than most others, the great value of the medical library and the need for the promotion of its usefulness.

Tonight's occasion is an important event in the medical history of this community and I wish to record the fact, here and now, that the idea of naming the Library after Dr. Matas, originated in the mind of Dr. Lemann. Quite so, the rest of us,—members of the Faculty, the Dean, the President and the Board of Administrators,—unanimously endorsed and promoted its accomplishment; but Dr. Lemann originated it. Let the credit be placed where the credit belongs.

As Dr. Lemann foresaw, the labeling of every volume with the name of the distinguished master, will not only honor him in our all-too-feeble way, but it will greatly enhance the educational, cultural and practical value of the library. Every reader, whether undergraduate student or physician, will have this star always before him to encourage him on to greater effort and higher attainment.

Dr. Lemann's deep interest in the medical library is further exemplified by the fact that his large and valuable private collection has already been transferred here, in accordance with his wishes, to be placed to the best possible use.

The Maurice Stern Fund for Medical Literature, established in 1924, deserves special mention. The income from this fund of $12,000 is devoted to acquisition, through purchase or subscription, of new material and has greatly aided the much-needed expansion of the list of journals.

Within the limitations of available funds, the annual budget of the School of Medicine has provided for purchase of books, continuation of subscriptions, binding and for filling in gaps in the files. But there always has been need for much more than could be spared from this source.

The volume and usefulness of the library has been greatly increased by generous donations of books, journals and other material, from members of the faculty, alumni, other physicians and the families of deceased physicians. But the largest donor of valuable material of this kind has been Dr. Matas. For years he has been passing on to this library hundreds and hundreds of volumes from his own private collection. Many have been purchased for the library out of his own pocket and placed there directly. Not only has he been a contributor but he has been a collector for the library and it has been through his efforts and influence that much other valuable material has been secured.

Not only has he contributed so largely of books and publications but he has been keenly interested in medicine in art and has collected or promoted the collection of enough material of this nature already to crowd the museum room in the library. There are many old prints and medical caricatures. The library now has over 1,500 mounted portraits of physicians, largely through his interest.

But all of these contributions from Dr. Matas, which go a long way to make this library what it is, are no more important than

the influence of the example he has set as teacher, consultant, author and research worker, of appreciation and use of the library.

The very building in which the library is located would not be here, had it not been for the influence of Dr. Matas. The Hutchinson Fund was established as a result of the confidence placed by Mr. Alexander Hutchinson in his advice and counsel, and it was because we had the Hutchinson Fund and had shown the ability to make proper use of it in our education program, that the General Education Board consented to give us the money for the present building.

This *is* the Rudolph Matas Medical Library. It always *has been* the Rudolph Matas Medical Library. We are now only formally and more permanently recording this long-recognized and well-known fact. In this, as in a thousand other ways, the name and the influence of our own Dr. Matas, one of the foremost men in medicine in modern times, redounds to the everlasting benefit of the community of New Orleans, of the community of Louisiana, of the community of the Southland, of the community of America, of the community of the whole world.

REMARKS

RUFUS C. HARRIS
NEW ORLEANS

It is a very happy occasion to us to dedicate the Medical School Library of Tulane to Dr. Rudolph Matas. It is our hope that the Library will be able to administer to the ever-increasing needs of students, faculty and practicing physicians as Dr. Matas has done throughout a long and active life of great service to this institution. He has been its leader and an ever-serving example of the highest ideal of the medical profession.

In naming the library this evening, I think it is interesting to note that Dr. Matas has studied and contributed in such diverse fields, and his knowledge of medical literature is so great that often it has been said that his colleagues have felt that by consulting him they could extract more information from his encyclopedic mind than they could obtain from a visit to a library. That opportunity is not open to as many as would wish it, however, and so here we shall attempt to combine the two—the knowledge stored in this library, and the great spirit of learning evidenced and encouraged by Dr. Matas. There is no person more fit to lend his name to this library, and there is no other person to whom this library could look so well. Dr. Matas has carried his great medical learning in the grand manner. Not only in the technical skill of his profession but by his fine qualities of character and his unswerving devotion in medicine to the vision of high calling has he made for himself the name we give our library. He has been called the great high priest of surgical and medical ethics.

There has always been in our hearts a great love for him, a sincere devotion to him personally for his lovable characteristics, and a fond pride in his great work and achievements. The school that laid open to him the sources of knowledge has been so amply repaid for her efforts by her pride in him, that we have wished to do something to indicate to him in a small way that devotion and admiration and love we have for him. It is so difficult for an institution to show a person what an individual can express more easily. There are persons who indeed are the heart and arteries of an institution, but their acts are known only to the other members of the body and are clothed in anonymity to the public. We can only acknowledge them in death. Closely associated in my mind with this event is another such man, my dear friend and the friend of the medical school, Dr. I. I. Lemann. Dr. Lemann was a great admirer of Dr. Matas, and was among the first to suggest the dedication of this library to him. He went with me to call on Dr. Matas to ask him to accept this evidence of our esteem for him. He would have been so happy to be here tonight quietly to help honor him. Living the daily life makes so many demands upon us that sometimes we remember only a few of the things that we should never forget. There is no finer quality of character than gratitude. And here tonight may I solemnly declare that it is my hope that never may one have cause

fairly to assert that this institution is unmindful or forgets the love of its friends. I hope it may be understood that an occasion such as this is an effort of ours to indicate our affection and esteem to one who has been such a friend and who has meant so much to us at Tulane as well as to the medical world.

I am deeply happy that the great name of Dr. Rudolph Matas, even now while he lives, may lend itself to this library. It is my wish that he may always know that the great work he has done during his lifetime will be assisted in continuance by the splendid library repositories, one of which will bear his name.

And now upon the recommendation of the Faculty of the Tulane School of Medicine and the approval of the Board of Administrators, I hereby declare that, by virtue of the authority vested in me as President of Tulane University, this library is named the Rudolph Matas Library of the School of Medicine of Tulane University.

RESPONSE

RUDOLPH MATAS, M. D.
NEW ORLEANS

Mr. President, Ladies and Gentlemen:

After hearing the remarks of our honored President, and the marvelous eulogy of my dear friend and Dean, Dr. Bass, I recall an episode in our local history which may be apropos of this situation. It is the story of a prominent politician, highly esteemed for his unswerving loyalty to his party, who was reported critically ill in one of the neighboring parishes. A friend and editor of the local paper, believing in preparedness, wrote a long obituary—a veritable hymn of praise—which he kept in reserve for immediate use should the occasion arise. Suddenly, one night, the report reached the editorial sanctum that the great man had died. Instantly, the machinery of the press was set in motion and the community was startled by an extra edition framed in mourning bands and printed in glaring headlines which proclaimed to the people the immeasurable loss that the community had sustained. The next day, the editor received the following note: "Dear Jim: That was a wonderful obituary of yours. I had no idea that my death meant such a terrible loss to the party and to the people, but your editorial has come to me like a trumpet call to rouse me from the grave and make me feel that I must get back on my feet, if only to prove that all you have said of me is true. Yours gratefully, Jack."

* * *

I realize that in the present situation, I should be really silent, as becomes one who has an epitaph inscribed over him and who can only speak to posterity through the voice of his friends and contemporaries.

Fortunately for my voice I am not in the category of the illustrious dead and I am still able to imitate that famous Danish surgeon of Chicago, Christian Fenger, who, when approached, at 70, by a committee with the plans for a monument to be erected in his honor, exclaimed: "What! A memorial? Why I am not dead yet! You have not even given me a chance to deserve it!"

Now let me say at the outset that, while I am deeply sensitive to your praise and appreciate fully the generous motive that has prompted the Administrators and the Faculty of my Alma Mater, to distinguish me with this testimonial of their esteem, I must confess that, at my age, I am shy of dedications and eulogies which have such a close resemblance to memorials. They seem to challenge my longevity and embarrass me with the weight of their epitaphy.

If you had dedicated this library to the memory of one of the erudite bibliophiles of our profession who have given luster to the medical literature of Louisiana, such as a Bennet Dowler, a Cartwright, a Barton, a Chaille or a Joseph Jones, or some other great book lover of your choice, you would have made my task much easier, as I would have been able to join you in the chorus of praise.

Personally, I can safely say that I have arrived at that age when vanity and the fugitive ambitions of the flesh cannot influence my actions or thrill me with the conceit of overweening ambitions. I am reminded that I cannot take with me the medals, titles or honors, which I now prize so dearly, on that last journey where no one is allowed to take with him anything more than his naked worth. But

I would be untrue to myself and to the sentiments of loyalty that inspire our most laudable conduct were I to pretend indifference to the manifestations of approval from those whom I honor and respect, and who have sweetened my life with tokens of their affection, and have filled my heart with ebullitions of gratitude.

I am indeed happy in the thought that I may have accomplished something in the course of my existence that my associates and contemporaries deem worthy of commendation or remembrance, or anything in fact, no matter how little, that may have added to the good name and prosperity of the institution which gave me my professional birth; or contributed to the welfare and happiness of the community with which my own contentment and prosperity are so inseparably blended.

There is much that I could say regarding my now historic relations with this library which, since its birth, I have looked upon with a paternal solicitude almost as if it were my own child. But Dr. Bass has said so much and so generously in this connection that it would be worse than superfluous to add to his remarks. There is much, however, that I could say of my personal experiences with the personnel of the library, and of the debt of gratitude that I owe to those who have nursed it into existence; something to tell of the fidelity and devotion of the first Librarian, Miss Jane Grey Rogers, of blessed memory; something again in praise of the achievements of the present librarian, Miss Marshall, whose administrative genius, so admirably displayed in her dual functions as Librarian of the joint University and Parish libraries, has made of the efficient and harmonious union of these two collections the greatest single factor in the rapid rise of medical culture and bibliographic research in our community.

I would like to speak also of the Library Committee and especially of our late associate and lamented friend, the Chairman, Dr. I. I. Lemann, whose name we cannot mention without recalling his splendid personality, his intellectual gifts, his remarkable clearness of judgment and absolute fairness as a presiding officer, and his deep and abiding interest in the welfare of the library, which he testified by his constant solicitude for its greater merit and usefulness. This and much more I could say, but I am reminded that I have said quite enough for a resurrected ghost. Besides, there is another function to be fulfilled. For, as the program indicates, the guests who have graced this occasion with their presence, are invited to visit the library and inspect its treasures, if only to verify by their own testimony that the Board of Administrators of the Tulane University has given my name to something that is not ghostly or purely ethereal, but to a living, palpitating reality that is possessed of the gifts of an infinite eternity.

THE USE OF LIPIODOL IN CERTAIN ORTHOPEDIC AFFECTIONS*

GEORGE C. BATTALORA, M. D.
NEW ORLEANS

In 1920, Sicard and Forestier were making a radiographic study of the epidural space by means of lipiodol injections, when their attention was called to the fact that in some patients suffering from lumbar pains the pain was relieved. The injections were repeated at the request of their patients, with still further alleviation of the pain. Since then these men have used the drug in numerous other conditions and have worked out a specific technic for its use. This was described by Forestier in an article read before the Southern Medical Association in 1934.

That the injections are free from any injurious effects has been testified to by numerous observers. Abscesses do not occur, and it is only in an extremely rare case that symptoms of iodism will occur, two cases in several thousands of injections (Forestier). The failure of development of toxic symptoms is undoubtedly due to the very slow rate of absorption of the drug. Roentgen ray evidence of the presence of the drug can be seen even one year after injection.

The mode of action of the drug is not clear. Several theories have been advanced as to this action. Some contend that the presence of the

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*Read before the Louisiana State Medical Society, Monroe, April 28, 1937.

drug in the deep tissues induces a polymorphonuclear leukocytic infiltration, and that it is the phagocytic action of these cells that causes the improvement. Others claim that it is the stretching action of the injected material that gives the beneficial results, analogous to the stretching and breaking up of adhesions by petrissage, where the tissues are kneaded and roughly handled.

Coste believes that the disruption of the tissues caused by the injection results in the formation of new blood channels to the part, and this is the cause of the improvement. In the discussion of Coste's article, Fiessenger contends that there is an influx of polymorphonuclear leukocytes with the formation of innumerable minute abscesses about the droplets of oil. This is not probable, as the spread of the oil in the deep tissues would not be nearly as rapid as it is.

It is probable that several factors are at work, and in addition, that the oil has a definite local anesthetic action. On account of its prolonged stay in the tissues this action is present for a long period of time. The drug spreads from the site of injection along the tissue planes to a far-removed point. This spread begins very early, within a week after injection. In one patient injected about the shoulder, the oil was noted on roentgen ray examination in the region of the elbow six weeks later.

TECHNIC

The injections are made with a small syringe having a wide flange so that great pressure can be exerted to expel the oil. The needle used should not be larger than 19 gauge. If a larger needle is used it unnecessarily traumatizes the tissues, and quite a quantity of the oil may run out of the puncture site after withdrawal of the needle. A preliminary injection of novocain is given and then the lipiodol is injected. The oil should be warmed slightly above body temperature, otherwise the expulsion of the oil from the syringe will be quite difficult on account of its great viscosity.

METHOD OF TREATMENT IN ORTHOPEDIC CONDITIONS

This method of treatment has been used for quite a number of years by European physicians, particularly the French, but I have failed to find any reference to its use in this country except in an article read before this society by Oscar J. Bienvenu in 1935. In his paper he referred to the hypodermic use of the drug, but dwelled, however, on its use as an antiseptic in deep-seated infections with chronic draining sinuses. Several cases of osteomyelitis with draining sinuses that were healed by this method were presented. In the present paper I will dwell essentially on the use of lipiodol as a deep-seated injection in certain orthopedic conditions.

SHOULDERS AND NECK

The various conditions in which lipiodol injections may prove advantageous will be dealt with by regions, beginning with the shoulder and neck. In this region, cervico-brachial neuritis, periarthritis of the shoulder-joint, and subdeltoid arthritis are the conditions most amenable to this form of treatment. In cervico-brachial neuritis, paravertebral injections are made into two or three interspaces to include the nerve trunks involved, 2 c.c. of lipiodol is injected into each space.

In periarthritis of the shoulder-joint, where no specific diagnosis can be made, the upper end of the humerus is encircled with the oil by means of multiple punctures. The injections are made against the bone, at the site of insertion of the capsular ligaments. Care must be exercised not to inject the drug into the joint. In this condition the results are not nearly as well borne out as in treating the knee-joint.

In subdeltoid bursitis, the injection of 2 c.c. of lipiodol is made into the bursal sac. The pain is at first increased and then begins to subside. Motion of the shoulder-joint, particularly in abduction, should be encouraged as the pain subsides. Repetition of the injection may be necessary; as a rule, two injections suffice. I have used this method in one acute case, and the result was spectacular. Prior to the injection palliative measures were used, and it was necessary to use morphine to control pain. On the day following injection, the patient was able to return to his work as a mechanic, and no further sedative medication was necessary. Whether this improvement was due to the lipiodol injection, or simply to the puncture of the bursal sac, is problematic.

At the elbow, the injections are recommended for tennis elbow, and for localized types of neuritis.

SPINAL REGION

In the spinal region, three types of injections may be used. In myositis, multiple injections into the involved muscle are recommended. In nerve root irritation, such as results from hypertrophic spondylitis, injections are made into the intervertebral foramina (Fildermann). In this method, one or two interspaces are attacked at a sitting, and several injections are made. The needle is introduced about two inches lateral to a spinous process, and carried down to the transverse process. It is then deviated upward to pass above the process and advanced about two centimeters. One to 2 c.c. of lipiodol is injected at each interspace. In this type of back pain it is extremely important that definite localization of the point of irritation be mapped out. Fildermann reported a case of a woman who had an old spinal injury, with a Kummell's kyphosis resulting, in whom complete relief of pain was obtained by these injections. Of course, in such a condition, it is not sufficient to stop treatment when pain is relieved, but measures must be adopted to prevent further damage.

The third type of injection in this region is the high epidural injection. This is done for intractable lumbar pain. The technic is similar to that used for inducing epidural ànalgesia.

At the lumbo-sacral region, injections are made for chronic sacro-iliac pain, and in lumbosacral strain, where a definite tender point can be mapped out. A low epidural injection here is also advantageous.

LESIONS IN LOWER EXTREMITIES

In sciatic pain, not the result of visceral disturbances, this method can bring marked relief to the patient. The injections are made into the nerve trunk, if this is tender on pressure, and multiple punctures will be necessary. In sciatic pain, where the nerve is not tender, a low epidural injection gives the maximum of relief. The injection is done under local analgesia, and 8 to 10 c.c. of lipiodol is injected into the sacral canal via the sacrococcygeal hiatus. The patient then lies on the affected side for two hours. The relief of pain is marked the following day, but soon returns. Two or three subsequent injections are necessary, and the results will vary from complete relief of pain to marked relief. I have found his method much more advantageous than using large quantities of saline as an epidural injection, because it can be done painlessly, and the patient is immediately ambulatory.

At the knee joint, Forestier is quite enthusiastic about periarticular injections in cases of hypertrophic arthritis. In this condition, multiple injections are made about the joint at the level of the capsular attachments, and into the periarticular tissues. Relief of pain endures from six months to one year. This method is based on the findings of Leriche and Policard that joint pain arises from capsular attachments and in the periarticular tissues, never from the intra-articular cartilage, as this is devoid of nerve fibers. Care must be exerted in making these injections that the joint cavity is not entered.

Intra-articular injections are recommended by Forestier only in cases of recurrent hydroarthrosis and in Charcot's arthropathy. The quantity injected in the former condition should be limited to 0.5 to 1.0 c.c., but in the latter condition, much larger quantities may be used. In the Charcot's joint the injections are repeated, and usually result in a diminution in the joint effusion with less tendency for dislocation to occur.

All French authors call attention to the irritating properties of lipiodol when injected into a joint. However, in 1930, Kreuscher and Kelikian reported their method of using lipiodol and iodipin in visualizing the knee and hip joints. Clinically, beneficial results were derived, consisting in freedom of action of the joint and relief of pain.

In the foot, the drug may be used in treating calcaneal osteoperiostitis, Morton's metatarsalgia and hallux valgus cases with pain. In the cases of hallux with pain, the injections are made at the attachments of the capsular ligaments. In anterior metatarsalgia, the painful area is carefully mapped out and the injection is made directly into it.

With regard to painful calcaneal spurs, it is my belief that this is the method of choice in

treating this condition. Under local analgesia, using 1 per cent novocain, a needle is introduced into the region of the spur. The injection should be made either from the internal or external aspect of the heel, and not from below. Two c.c. of lipiodol is then injected against the bone. The injection is not made at one point, but along the ridge of bone constituting the spur. On withdrawal of the needle the part is massaged for a few minutes, and the patient is allowed immediately to walk on the foot. The following day, pain may be quite marked, and the patient be unable to walk about. However, directly after this the pain begins to lessen, and in the average case, at the end of one week the patient is quite comfortable. It is exceptional that a second injection is necessary. If this method is employed, very few operative excisions of the spur will be necessary. Following the relief of pain, the necessary corrections are made in the shoe of the patient, as the painful spur is the result of some infection, plus chronic trauma.

SUMMARY

It is again reiterated that in most of the conditions described, the relief of pain by lipiodol injections does not constitute the entire treatment of the respective disorders. However, this freedom from pain gives the physician a chance to employ other methods much more satisfactorily than otherwise.

CONCLUSIONS

1. Lipiodol is a safe drug to use as a hypodermatic injection.
2. It has remarkable pain-relieving qualities in certain conditions.
3. The manner of its action is not well understood.
4. Treatment of certain conditions is greatly facilitated by the use of lipiodol injections.
5. It is the treatment of choice in painful calcaneal spurs.

DISCUSSION

Dr. E. D. Fenner (New Orleans): I regret that I have not had a larger personal experience with the application of lipiodol in the conditions Dr. Battalora spoke of, but think it a very promising method. I have used it in a number of cases, but I have not been able to follow some of them as I would like to. Recently, I had a patient who had received a blow on the side of the chest and ever since had been suffering with pain localized in the costal area. I made an injection of novocain in that region and relief resulted for several days. Then the symptoms came back and I gave lipiodol in the same region, infiltrating the tender spot and trying to reach the costal nerve. He did not complain, but I have not seen him since.

I had another case, subdeltoid bursitis, and in this patient I made an injection of 2 c.c. of lipiodol. He had been suffering considerably. He made free use of his arm and following the injection he disappeared, although he did not seem to be having any particular pain.

I have used it in a few cases of calcaneitis, which is generally associated with spur formation, and there, I agree with Dr. Battalora, it offers promising results. The most inexcusable operation in surgery is the removal of calcanean spurs. There are hundreds and hundreds with spur formation who never had a pain. I do not believe the spur is responsible for the pain and removal does not help, except that it gives rest. Lipiodol produces the action of iodine with resultant effect and is in many cases followed by relief of troublesome symptoms. Iodine is the only relief we have in these cases. Iodides will relieve these cases in six to ten weeks, but that is a terribly long time to spend, whereas with lipiodol we get relief much more promptly.

I wish I had had the courage to inject lipiodol into the joints. I would not be afraid of the iodine, but would be afraid of what would become of the oil. I suppose many of us have used tincture of iodine in cases of chronic hydrops and certainly had beneficial results in that condition. I have never injected lipiodol into the joint. I do not say that it would not be safe, but I have not tried it yet. In the shoulder it ought to be of service, but here anything may relieve subdeltoid bursitis. Jones believed that elevation of the arm will frequently relieve it. A large puncture with the exploring needle may give relief. We all know that the so-called calcareous deposits in subdeltoid bursitis may disappear over night, and whether the lipiodol has any other effect than in opening up the bursa, I do not know, but I believe it should be used.

I hope to be able to continue the use of this remedy in these cases. I tried it in a case of sacro-iliac and arthritic pain. In one patient I injected the sciatic nerve. The man did not have any particular pain, but some soreness for a few days. He did not develop paralytic symptoms and was considerably relieved, but then I have not had the opportunity to see him for some time and do not know the ultimate result. I tried it in one case of sacro-iliac pain, injecting the deep muscles. I

recall an expression of opinion by Dr. Painter of Boston, who told me a good many years ago he considered that most of the sacro-iliac pains were in the gluteal muscles. So I tried it in one case and got some relief, but certainly no definite cure of the patient. I feel that often this thing injected into the intervertebral foramen, as described by Dr. Battalora, would relieve these terrible cases we call for lack of better name "sciatic scoliosis," where the patient stands like this (illustrating) with the hip in which the pain is, prominent. If it would relieve these cases which are so difficult to deal with, we would have reason to be extremely grateful.

Dr. Guy Caldwell (Shreveport): I have not used lipiodol in painful joints or periarthritic conditions, but it is perhaps better than the simple infusion of saline or various other solutions I have tried in these and similar conditions. Lipiodol is certainly slower of absorption, and for the most part, non-irritating. I doubt very much the wisdom of putting it into joints, and Dr. Battalora has definitely suggested that we not introduce it into joint cavities.

Anything that will help the pain in these various regions is worth while. I think we should always remember, however, that these injections should supplement other treatment. We should not look upon it as the entire treatment, but should take steps to relieve pressure, or strain, and remove infectious foci.

Dr. Scott Hamilton (Monroe): I had one patient in whom I used lipiodol and the result was so spectacular, that I feel moved to report it. The patient was an elderly Italian woman, who had been used to doing her own work all her life. Rather suddenly, one month before consulting me, she felt an intense pain running down the right arm. Examination showed nothing more than an extremity that was somewhat colder than the other. I made a diagnosis of stellate ganglionitis, and injected the ganglion first with 2 c.c. of procain followed by 2 c.c. of lipiodol.

Fifteen minutes after the injection she moved her arm, free from pain; the temperature was the same as in the other arm. She resumed her work the next day. She reported at six months with no recurrence of pain.

I do not expect to get results like that with the majority of cases in which I use lipiodol, or lipiodol in conjunction with procain injections. At least the treatment offers an addition to our armamentarium which has proved to be of great value.

A CASE OF CYSTIC DISEASE OF THE PANCREAS WITH APPARENT DISAPPARANCE OF DIABETES FOLLOWING OPERATION

W. A. SODEMAN, M. D.*
NEW ORLEANS

In severe diabetes mellitus the return of glucose tolerance to such an extent that hyperglycemia and glycosuria do not appear on unlimited intake of carbohydrate is unusual[1,2]. I wish to report the following case not only because it demonstrates this unusual occurrence but also because of the extraordinary circumstances under which the tolerance was changed, because of the interesting pathologic changes in the pancreas, and to re-emphasize the importance of diagnosis of correctable pancreatic disease. Furthermore, in a search of the literature, although necessarily incomplete, I could find no similar case.

CASE REPORT

E. J. (No. 39564), a colored female, aged 30, entered the Medical Service of the Charity Hospital, complaining of numbness of the hands and feet. Two months prior to admission she began to notice ease of fatigue and loss of weight. A month later vague pains developed in the right lower quadrant. Thirst became more marked and with it polyuria appeared. She was continually hungry. With the development of numbness of the hands and feet, she applied for admission to the hospital. In the past her health had been generally good. On one occasion, seven years ago, she was treated for menorrhagia. Her urine contained no sugar at that time. Family history revealed no diabetes.

Examination on admission revealed a poorly nourished colored female of 30 years of age lying quietly in bed. She was semi-comatose and obviously dehydrated. The temperature was 98° and pulse 96. The respirations were 29 per minute, deep, and of the Kussmaul type. Blood pressure was 115/75. The height was 69 inches and weight 90 pounds. The eyeballs felt soft. The lips were slightly cyanosed. The chest was symmetrical. The heart and lungs were not remarkable. The abdominal wall was not rigid but there was diffuse tenderness; the liver and spleen were not felt and there were no abnormal masses. Pelvic examination revealed a relaxed perineum, bilateral cervical laceration and uterus normal in size. Both

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Fallopian tubes were palpable and slightly tender. The extremities showed much wasting and no pitting edema.

Laboratory Data: On admission the urine was clear, acid, specific gravity 1.018, albumin negative, sugar 4 per cent, acetone present; microscopic —no casts nor red blood cells. The blood sugar was 440 mg. per cent; NPN 28; hemoglobin 75 per cent; red blood cells 3,825,000; white blood cells 16,500, large mononuclears 10 per cent, small mononuclears 16 per cent; neutrophiles 74 per cent. The blood Wassermann test was strongly positive. Chest roentgenogram showed no evidence of parenchymal disease.

Course in Hospital: On admission treatment consisted of gastric lavage, 1000 c.c. saline hypodermoclysis, fluids forced by mouth and insulin every two hours with repeated urinalysis. Ninety units of insulin were given in the first eight hours. The urine was then acetone free. On the third day a diet of carbohydrate 103, protein 53, fat 195 was started and the insulin regulated until, on the fifteenth day, units 15 three times a day were given. Blood sugar was then 242 mg. per cent. Three-tenths of a gram of neosalvarsan were given at that time. Five days later the diet was changed to carbohydrate 250, protein 60, fat 140, which, in five days, required only units 15 three times a day to keep the urine sugar-free. The blood sugar fell to 178 mg. per cent. Any attempts to reduce insulin dosage further met with appearance of sugar in the urine. After eleven days of perfect control, sugar reappeared in the urine and the patient complained of abdominal distention. The temperature rose to 102° F. Examination showed tenderness and rigidity in the left upper quadrant of the abdomen where a small mass was palpated. It was extremely tender and immobile. Blood sugar was then 190 mg. per cent. Immediate operation was decided upon.

Operation by Dr. W. A. Ellender revealed that "the entire pancreas from tail to head showed cystic changes, one cyst being about the size of an orange." This large cyst, in the tail of the gland, contained a hemorrhagic fluid. A drain was inserted into the large cyst and the abdomen closed.

Postoperatively 1000 c.c. of 10 per cent glucose with insulin units 30 were given. The urine then showed a very slight trace of sugar. The infusion was repeated on the second day. On the third postoperative day a diet of carbohydrate 250, protein 60, fat 140, the preoperative diet, was instituted and the urine was sugar-free before each meal. No insulin was given. On the ninth day a slight trace of sugar was reported in the noonday specimen. The fasting blood sugar was 105 mg. per cent. Body weight was 102 pounds. From this day on until dischage on the thirty-eighth postoperative day, the 24-hour daily urine remained sugar-free in spite of elevations in the diet to carbohydrate 232, protein 93, fat 189, and later to carbohydrate 355, protein 93, fat 189, without insulin. Three days before discharge from the hospital the diet became unlimited in amount. No insulin was given. Blood sugar on discharge was 110 mg. per cent.

DISCUSSION

That the patient was a true diabetic according to our modern definition is clearly evident from the history, physical examination and laboratory data. Glycosuria was in excess of four per cent, fasting blood sugar far in excess of 150 mg. per cent. The patient was in obvious acidosis on admission to the hospital. Known glycosuria was present for at least eight weeks, ruling out chance glycosurias, or temporary infection. No signs of hyperthyroidism nor pituitary disease were present. These data clarify the diagnosis except for the possibility of dysinsulinism. In the period of observation, however, no evidence of marked spontaneous changes in tolerance nor periods of hypoglycemia unexplained by insulin used in therapy were noted.

Since pancreatic cysts themselves are only infrequently seen[3,4,5] cystic pancreatic diabetes is a still greater rarity[3,5,6]. The clinical picture varies. It may occur as (1) diabetes, mild or severe, with no clinical evidence of cystic disease; (2) the clinical picture of cyst and diabetes[3,7,8,9]; (3) cyst with no diabetes until the cyst is treated[10,11]. The present case suggests the existence of another group, (4), examples of which I have been unable to find in the literature, cyst and diabetes with return of sugar metabolism to normal following treatment.

The presence in this case of two known etiologic factors, syphilis and cystic pancreatic disease, demands a differentiation as to the cause of the diabetes.

Since the appearance of Warthin and Wilson's paper[12] suggesting the importance of syphilis in diabetes mellitus, evidence has been accumulating[13,14,15] to show that it is seldom related to diabetes and that the simultaneous occurrence of diabetes and syphilis is usually accidental. However, syphilis is regarded as a

cause of diabetes and cases are reported with remarkable increases in glucose tolerance with antiluetic therapy. Treatment must be intensive and prolonged for results and even then, as in aneurysm, the changes cannot be reversed entirely so that most cases respond poorly to treatment[13,16]. The little antiluetic therapy given in this case (0.3 gm. neosalvarsan) was hardly sufficient to produce demonstrable clinical improvement. I have found no description of syphilis causing cystic disease as seen here, although gumma of the pancreas, a rarity in itself, could obstruct the ducts and produce cystic dilatation. Such an occurrence would be extremely unusual.

The spectacular rise in the sugar tolerance immediately following the surgical procedure leaves without doubt the cause and effect relationship of the two, and establishes the fact that the cystic disease was the immediate cause of the diabetes. How the operative procedure brought about such a remarkable change in tolerance is a matter of speculation. Release of an embarrassed circulation to the islands of Langerhans or release of pressure upon the islands themselves are feasible explanations. Since no infected focus was found, an increase in tolerance dependent upon removal of such a focus is unlikely.

Why should drainage of a cyst in the tail of the pancreas relieve the diabetes when the entire pancreas was cystic? Aside from the possibility that the cystic areas were interconnected, a satisfactory explanation is at hand. Extirpation experiments show that only one-sixth of the pancreas is necessary to maintain normal sugar metabolism. This fact alone makes diabetes with cysts, inflammation and other gross lesions of the pancreas rare. When the gland is diffusely involved, the extent of the pathologic change in the tail is exceedingly important because, in the differences in the number and distribution of the islands of Langerhans, the tail contains more than other portions of the gland[17]. In this case one suspects that the release of pressure in the tail restored to function a sufficient number of islands to permit maintenance of normal levels of blood sugar.

I hesitate to call this case one of cured diabetes mellitus. Postoperative follow-up was possible for only seven weeks. When the diminished tolerance may return cannot be predicted, for the basic pathologic changes have not been removed. A lesson may be drawn from Bowen's patient[1] who, although showing normal tolerance for eighteen months, died in diabetic acidosis. The criterion for cure laid down by Joslin[18], evidence of return of sugar metabolism to the normal state for five or more years, is not unduly strict.

SUMMARY

A patient entering the hospital in diabetic acidosis was found to have cystic disease of the pancreas. Following operation glucose tolerance returned to normal and hyperglycemia and glycosuria did not appear on unlimited intake of carbohydrate. The occurrence of this unusual event points out the importance of the diagnosis of correctable pancreatic disease.

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KIENBÖCK'S DISEASE

REPORT OF A CASE

STAKELY HATCHETTE, M. D.
AND
C. V. HATCHETTE, M. D.
LAKE CHARLES

While Kienböck's disease of the semilunar bone can hardly be considered a rare condition, it is, nevertheless, uncommon if we may judge its prevalence by the number of reports of cases in medical literature since it was first described by Kienböck in 1910. The purpose of this paper is to call attention to the symptomatology of the condition and to demonstrate the roentgenologic findings seen in a typical early case. In view of the fact that a positive diagnosis in an early case can only be made from the roentgenogram, the roentgen findings are taken up somewhat in detail in our discussion of the disease.

DISCUSSION

The patient usually comes to the physician with a history of having suffered an injury to the wrist. A roentgenogram may have been made at the time of injury or soon after, but most frequently a negative report has been given. Pain in the wrist may persist for a period ranging from a day or two up to several weeks. At this time it usually stops and the period of quiescence suggests that the injury has been completely repaired. After a variable length of time the patient again begins to experience discomfort in the wrist which is accompanied by limitation of motion, pain and swelling. It is at this time that the patient returns to his physician and another roentgenogram is made. If the general outline of the bone has been preserved (fig. 1) the irregularly calcified areas may blend and the condition may pass, leaving little deformity to indicate that a lesion has been present. In this

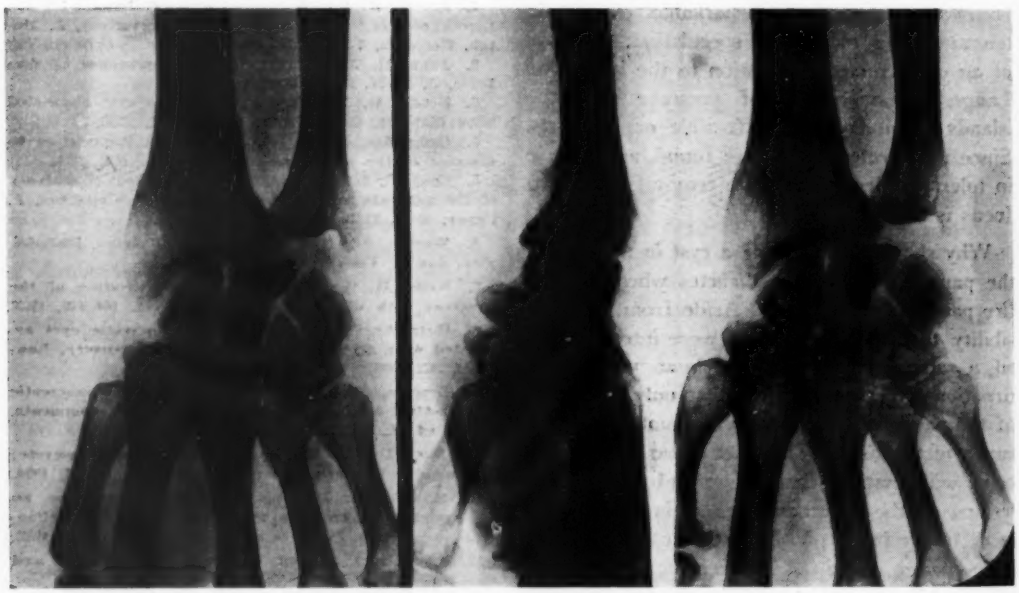

Fig. 1. The semilunar bone is much more dense than the other carpal bones. Cystic areas of rarefaction are present within it. The ulna is shorter than the radius and their articular surfaces are not in the same plane.

case, areas of increased density, together with cystic areas of decreased density, occur together in the bone (fig. 1). Healing may occur as stated above. However, the condition may progress still further so that the islands of bone of increased density may have the appearance of having been crushed together and a wedge-shaped bone results which has a considerably greater density than the remaining bones of the wrist, and compression deformities of greater or lesser degrees occur. In the event of compression taking place, the frag-

ments of bone eventually heal in the deformed shape and the symptoms gradually subside. If the bone heals in this deformed state, the joints of which the articular surfaces are a part are subjected to abnormal conditions, and as a result of abnormal stresses and strains, early chronic arthritic changes develop. This brings on the third stage which consists of pain, discomfort and limitation of motion.

Numerous explanations have been given for the changes seen in the bone, including fracture of the cancellous bone, injury to the blood vessels, tearing of the ligaments and interference with the nutrition of the bone, embolism, aseptic necrosis, and necrosis due to low grade septic organisms and trauma. The roentgenologic appearances, however, are suggestive that fracture of the cancellous bone is the most likely cause, and that the bone probably becomes compressed and deformed as a result of pressure and muscle pull while the bone is still in the plastic reorganizing stage.

Hulten,[8] after examining 400 normal wrists, found that in 23 per cent of cases the ulna was shorter than the radius and that the articular surfaces of these two bones were not in the same plane; he also found that Kienböck's disease only occurred in those patients with the shorter ulna. This feature is well shown in the accompanying roentgenogram of this case, and it is suggestive of the semilunar bone being more likely to be subjected to severe injury if the ulna is short (fig. 1). Brailsford[2], however, reports cases of Kienböck's disease in which the radius and ulna are of normal length, some of his cases even presenting a marked collapse of the affected bone.

CASE REPORT

D. I., aged 26 years, a white male, came to the office of one of us (C. V. H.) on October 1, 1937. The background of his medical and surgical history was of no significance. He stated that on May 18, 1937, while working on an oil derrick he received an injury to the palmar surface of his right hand which caused a sudden bending backward of the hand and the deliverance of a hard blow to the "heel" of his hand as it was in this position. He immediately felt a severe pain in the hand and wrist which radiated up to the arm and shoulder. He did not stop working, but continued on to complete the day's work which ended about two hours after the accident. After his injury he used the right hand sparingly, working almost entirely with his left hand.

He was sent to the company doctor for treatment as soon as the day's work was over. At the physician's office the wrist was examined both physically and by means of roentgen rays. The patient was told that he had sustained a fracture of the wrist. The right hand and wrist were put in a cast for two days, at the end of which the cast was removed and an ointment applied to the hand and wrist for about a week. In the meantime the swelling had subsided, and, at the end of the nine day period from the time of the injury, the swelling had entirely disappeared and the wrist felt a great deal better, though not yet completely free of pain. He was allowed to remain on the "sick list" a few days and was then sent back to work on May 27. He used the hand on this day with some difficulty and, at the end of the day, noticed a slight swelling in the region of the wrist. The next day he again worked with the hand and, as the day progressed, the wrist became quite painful and so swollen that, at the end of the day's work, he could hardly remove his glove from his hand. He was again sent back to the company doctor where his hand and wrist were strapped with adhesive tape and he was put back on the "sick list." During the next four weeks he received daily heat treatments with the infra-red ray. Because the wrist remained swollen and painful at the end of this time, he was referred to a physician in another city who treated him for four and a half weeks more with short wave heat therapy. At the end of this time the swelling had completely subsided and the wrist was practically symptomless. He was discharged from further surgical care and sent back to work on July 26. He did not report for work immediately, deciding to "do a little work around the home" for a few days. At the end of these "few days" the wrist and hand swelled again and the wrist became very painful once more. He went back to the physician who had seen him originally, was told that this physician could do nothing more, and it was recommended that he have a surgeon operate on his wrist. Nothing was done for seven weeks, and the patient was referred to one of us (C. V. H.) through a local attorney for a diagnosis and estimate of disability.

The general physical examination was irrelevant. The pulse rate was 68 and the temperature 98.6 degrees F.

The local physical examination of the right wrist showed a moderate degree of swelling over the dorsum of the wrist. Palpation over the area was painful. All motions of the wrist were limited, and this was especially so of extension. Passive

motion was limited in all directions and was painful in attempts at extension. On jarring the thumb the patient complained of sharp pains over the dorsum of the wrist corresponding to the area of greatest swelling. There was free motion of all the phalangeal joints, and no pain on movement in any direction.

Roentgenographic examination showed the bones of the wrist were normal in appearance except for the semilunar. Its outline was intact, but the bone itself was much more dense than the other carpal bones and it showed several cyst-like areas of decreased density. The ulna was shorter than the radius, so that their articular surfaces were not in the same plane.

Diagnosis was made of Kienböck's disease, (synonyms are traumatic malacia and semilunar malacia), congenital shortening of the ulna.

SUMMARY

Kienböck's disease, which is an osteochondritis of the carpal semilunar, consists of a degeneration of this bone following trauma, and it is characterized by a persistence of pain, swelling, and a disability that fails to respond to the usual remedial measures. Surgical removal of the bone frequently becomes necessary. The great majority of cases reported have been in males in early adult life, and especially in those engaged in manual occupations. The condition is explained as being the result of fracture of the cancellous bone, injury to the blood vessels, tearing of the ligaments and interference with the nutrition of the bone, embolism, aseptic necrosis, and necrosis due to low grade septic organisms and trauma.

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ISOLATED FRACTURE OF THE OS TRIQUETRUM

A. MAYORAL, M. D.
NEW ORLEANS

CASE REPORT

Recently a young man came to the out-patient clinic of the U. S. Marine Hospital, New Orleans, and gave the following history: A week previously, while doing gymnastic exercises on the horizontal bars, he fell on his out-stretched hands, since which fall the right wrist has been painful. He believed that he had a sprained wrist. As the pain did not improve, he came for treatment.

Examination revealed no impairment of movement, no swelling, pain localized to the pisiform cuneiform region. Roentgenogram revealed a fracture of the os triquetrum (fig. 1). Not having seen

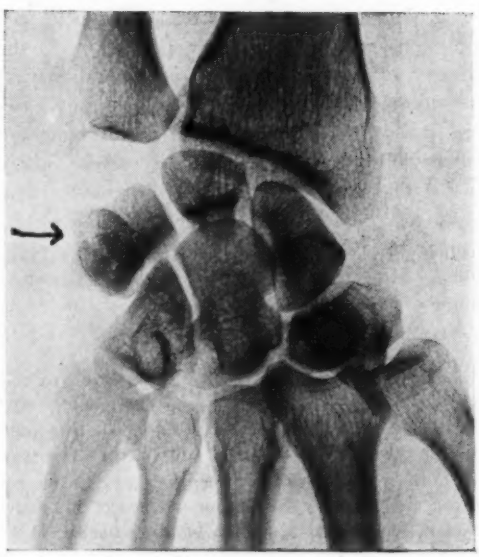

Figure 1.

this fracture before, the current textbooks on general surgery and special works on fractures were consulted, but little information was gained from them as the subject was meagerly treated.

DISCUSSION

In the literature as far back as 1014 I was able to find six articles [1, 2, 3, 4, 5, 6] dealing with fractures of the os triquetrum. The longest series is reported by Volkmann[5], who records 48 cases (6 of his own), in 35 of which the carpal cuneiform is the only bone fractured. Of a total of 104 cases recorded in these six articles, 57 were isolated fractures of the os triquetrum. Search of our own records showed that in the past nine years 26,180 roentgenograms had been made of traumatized bones or joints for suspected fractures, and only once was this type of fracture discovered. I therefore believe that isolated fractures of the os triquetrum are rare.

The symptoms in our case were pain on motion, not sufficient to interfere with movements, tenderness localized over carpal cuneiform, no swelling, no crepitus, or deformity of wrist. Clinically, the injury could not be detected; only a roentgenogram revealed the fracture.

It seems that one of two conditions must occur for this bone to be fractured: (1) Overstretching of the ligamentum carpi-dorsalis or (2) compression injury to the wrist.

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THE GRADUATE MEDICAL ASSEMBLY

Ample notice has been given to the members of the State Medical Society concerning this outstanding meeting which will take place in New Orleans March 7-10. Among other forms of announcement, programs have been mailed throughout the State. However, in spite of the publicity that the officers of the organization have arranged for, it would not be amiss again to call attention to the splendid character of this assembly and to mention a word or two about some of the men who are going to appear on the program.

Starting Monday morning there will be the usual addresses of welcome and then will follow a talk on diabetes by Dr. Reginald Fitz, one of the outstanding clinicians in this country. The next two hours will be spent at luncheon round-table discussions and then the organization will reconvene to hear some more of the scientific presentations. It is impossible to mention each man who is to appear on the program and to give the detailed description of what is to occur each day, but from personal observations it can be said that Dr. Harvey B. Stone's talk on carcinoma of the colon will be presented by a man who is a splendid speaker and who presents his subject with authority. At the evening session Dr. A. Graeme Mitchell, Professor of Pediatrics at the University of Cincinnati College of Medicine, has a most intriguing topic "What I Don't Know About the Endocrines." It is safe to assume that Dr. Mitchell will point out that a great deal of hypothesis and unproved statements exist in the realm of endocrinology. On Tuesday practically the same men will appear on the program and very much the same order of business will be followed. On Wednesday and Thursday a new group of speakers will tell what they know about their subjects. Again space precludes the possibility of mentioning each man but attention should be called to the fact that Dr. Arthur Hertzler, whose nine books on surgical pathology are delightful reading and whose ability as a speaker is well known, will philosophize on "The Degenerative Toxic Goiter Heart" at the afternoon session. Dr. Warren Vaughan of Richmond will expound on allergy on this same day and in the evening session Dr. Udo J. Wile will give a lantern demonstration on common mucous membrane lesions of the mouth. On the last day the same group of speakers will hold forth but of course on different subjects. Some of the titles seem most interesting: Dr. Temple S. Fay on "The Mechanism of Headache"; Dr. Norman F. Miller on "The Woman at Forty"; Dr. Hertzler on "Pathology and Treatment of Dentigerous Tumors"; Dr. Wile on "The Treatment of Syphilis and Pregnancy." These would

seem like presentations which should interest every one.

That night there will be a joint meeting with the Orleans Parish Medical Society.

In addition to the attraction of the speakers, a splendid scientific exhibit by 39 different physicians and agencies and a splendid commercial exhibit will round out the professional program. In addition to the serious phases of the meeting, entertainments have been provided by the active chairmen and their committees; the opportunity to play golf if a man wants to slip off for an afternoon and other extraneous activities have been arranged. Altogether this second session of the New Orleans Graduate Medical Assembly should be of very real value to the practicing physician. The outlook at the present is that it will be a bigger and better meeting than the highly successful gathering of the organization last year.

ACCOMPLISHMENTS OF THE LOUISIANA STATE BOARD OF HEALTH

A little pamphlet has been sent out by the State Board of Health under the same title as that given above. It shows very clearly what the Board of Health has done in the last few years to improve health and sanitary conditions throughout the State. It also by implication contrasts the State Board of Health of bygone days with a modern efficiently functioning health service.

In 1937 there were six bureaus at work, some recently established, some long in existence but in all of them their activities have increased markedly in the past few years. The Bureau of Foods and Drugs has jurisdiction over what we order for our patients. It meticulously supervises the distribution and marketing of eggs, milk, poultry and foods, as well as drinks and drugs. The Bureau of Sanitary Engineering watches over water supplies and sewage disposal, as well as mosquito control and passes on plans for new schools and public buildings. The Bureau of Laboratories now has a central chemical laboratory and a bacteriologic laboratory with five branches at strategic points throughout the State. The Bureau of Vital Statistics, one of the earliest bureaus to function, collects and records birth and death rates. To the Bureau of Epidemiology and Malaria Control is assigned the duty of collecting and tabulating the communicable diseases reported from throughout the State; to it also is assigned the function of advisory health service.

In the last couple of years the Bureau of Parish Health Administration has grown enormously. At the present time there are 39 whole-time parish units with complete personnel working throughout the State. They cooperate and integrate their duties with the headquarter Bureaus. To this bureau is assigned a tuberculosis diagnostic clinic, mobile in character, as well as a similar malaria control unit, both of which move from place to place in Louisiana, the one diagnosing tuberculosis, the other unit planning with the local authorities on how best to control malaria. Fourteen venereal disease clinics have sprung up in the last few years. It is planned to open others in a short time.

Many of the readers of the Journal have probably perused the concise pamphlet from which the above facts are obtained. It does not seem redundant, however, again to stress the splendid work that is being done by the Louisiana State Board of Health under the direction of the President-Elect of the State Medical Society. It does not seem amiss here to offer a word of congratulation for splendid accomplishments and for far-reaching plans for improvement of the State Health Service.

ANOTHER FUNCTION OF THE LIVER

It has been known that in certain types of advanced liver disease a macrocytic type of anemia comparable hematologically to pernicious anemia may develop.[1] This type of anemia is assumed to be due to failure to store the antianemic factor which is elaborated in the stomach. This type of anemia is by no means uncommon but not nearly as common as the microcytic anemia, commonly spoken of as secondary anemia, which is very frequently seen in all types of liver disease.

Hawkins, Robscheit-Robbins and Whipple[2]

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have noted in previous experiments that hemoglobin production is profoundly influenced when there is a bile-fistula experimentally produced. In those dogs with the artificial fistula only about one-half as much hemoglobin is produced on a standard diet as compared to the control animals. To study intensively this question, this group of investigators took a series of animals, maintained them in good health on an adequate diet and in satisfactory weight equilibrium. It was found that in these bile-fistula animals iron given by mouth, when an anemia was established, produced only one-half the amount of new hemoglobin as it did in the control periods. Iron absorption is undoubtedly seriously impaired in the anemic bile-fistula dog but this does not explain entirely the anemia that is cured with difficulty. These dogs also show a pronounced tendency to bleed probably as result of disturbances in the production of prothrombin. As result of the studies of the authors on the bile-fistula animals, which at autopsy show no evidence of bone marrow disturbance, they have come to the conclusion that inadequate hemoglobin production in their animals is dependent upon disturbed liver function. Thus they have evolved another function of that tremendously important, largest sized organ of the body with its innumerable functions and purposes in the human economy.

PREVENTION OF RENAL STONES

Kidney stones are extremely common. They may be quiet concretions or they may be the cause of considerable amount of discomfort, pain and other disturbing symptoms. Most physicians do not consider the possibility of preventing stones until after they have been formed. This, of course, is perfectly obvious as the majority of people do not have them and there is no particular reason why the great mass of the population should subject themselves to elaborate regimes which for the most part would be rather difficult to follow and which undoubtedly would make the patient introspective. However, once a person has had stone there is a strong likelihood it will return and there are measures which may prevent further formation or hold in abeyance further increase in the size of the calculus.

A stone is formed by precipitation of crystalloids as result of certain factors, the primary one of which undoubtedly is found in such things as stasis, infection, hypovitaminosis, lack of colloids and excess of crystalloids in the urine, according to Fuller Albright.* Given such a factor, or factors, precipitation is favored if there happens in the urine a large amount of crystalloids which are going to form or have formed a stone. If the composition of the stone is known, certain procedures may prevent further accretions to it; but first, in outlining medical treatment, the determination of the kind of stone is important. This may be determined by roentgen ray appearance of the calculus, the type of diet the patient eats, the composition of the urine and the size of the stone. The four main types of stones are: cystine, uric acid, calcium-phosphate and calcium oxalate. The prevention of the first consists in keeping the urine alkaline; the second, again keeping the urine alkaline is the most important prophylactic measure, far more so than a low purine diet. Calcium-phosphate stones may be obviated by keeping the diet acid, chiefly through the administration of large quantities of meat. Acid forming drugs may be given and the patient should be warned against the taking of excessive amounts of alkalis for digestive disturbances or for any other reason. Calcium oxalate stones may be prevented only by giving a low-oxalate diet.

In any form of calculus the urine should be kept dilute by having the patient take large amounts of fluids. The urine may be kept alkaline by the administration of alkalis as well as through an alkaline ash diet. These measures are suggested only when the patient is free from urinary tract infection. If infection is present it should be eliminated, but this is another matter.

*Albright, Fuller: Some medical aspects of the renal stone problem, New England J. Med., 217:1063, 1937.

HOSPITAL STAFF TRANSACTIONS AND CLINICAL MEETINGS

HIGHLAND SANITARIUM

The Staff of the Highland Sanitarium held its monthly meeting on February 17, 1938, in the Clinic Building, following dinner at 7:00 p. m.

SCIENTIFIC PROGRAM

Dr. Mathews presented two most interesting cases of lymphosarcoma of the gastrointestinal tract. Both patients complained of cramping abdominal pain of the intermittent type, the pain being nocturnal in character. The finding on physical examination was lower abdominal tumor mass; exploratory laparotomy revealed a lobulated tumor mass involving the lower ileum. The microscopic picture was typical of lymphosarcoma. Dr. Mathews also discussed two cases of Hodgkin's disease involving the gastrointestinal tract, one case involving the stomach which was interpreted by roentgen ray examination as being carcinoma of the stomach. The microscopic examination of the resected stomach revealed findings typical of Hodgkin's disease. The second case of Hodgkin's disease was found at autopsy to involve the cecum. Findings at autopsy revealed the mass in the region of the cecum to be adherent to the adnexa with rupture and peritonitis. Discussion was opened by Dr. Butler, followed by Dr. Webb and Dr. H. G. F. Edwards, and closed by Dr. Mathews.

Dr. George Wolfe reported a most interesting case of disseminated encephalomyelitis in a baby aged 2 years 8 months. Dr. Wolfe pointed out the confusing symptom complex and the difficulties encountered in making an accurate diagnosis. Dr. Wolfe stated that the patient was given fever therapy in the form of typhoid vaccine, and, on the last check-up examination on January 24, the baby seen to be clinically cured. Discussion was opened by Dr. Duncan and closed by Dr. Wolfe.

Paul W. Winder, M. D., Sec.

FRENCH HOSPITAL

The French Hospital Staff meeting was called to order with Dr. J. Palermo presiding; the minutes of the last meeting were read by Dr. R. E. Rougelot.

Dr. S. C. Lyons spoke on the treatment of carbuncles, furuncles and boils. Stock vaccine of staphylococcus is used (Parke Davis). If the patient is seen early and vaccine treatment begun, the pus can be evacuated about the third or fourth day. The first injection consists of ½ c.c which is increased once again every 12 hours until 2 c.c. is reached. It is given in the deltoid muscle. The lesion usually subsides in four to six days. Additional local treatment is used, depending upon the physician's choice. If the lesions are seen later than the first or second day, vaccine is still given because it helps to liquefy the slough. Mortality from carbuncles is about 6 per cent. Location occurs in the order named: neck, back, head and face. When diabetes is present the mortality rises to 30 per cent. The age incidence varies from 40 to 60 years. Dr. Lyons quoted Dr. W. H. Harris as saying that the vaccine was of value due to the fact that the opsonic index is increased and hence the body cells (leukocytes) have a high phagocytic power. In conclusion, he states that he considers the vaccine treatment is the best means of treating this type of lesion. However, it does not seem to be so successful in treating acne.

Under new business Dr. Rougelot suggested that the scientific essays committee appoint in rotation a staff member in the various branches to report on some subject in his field or to comment briefly on a journal article or some interesting case at each meeting, either in conjunction with the scientific program or when none has been formed. The raison d'etre being to stimulate an interest in the meetings and to encourage attendance. This was voted on favorably, but is still to some extent under discussion, the gist of this discussion being that the members favor this line of thought, inasmuch as it concerns a symposium of staff members on an interesting case or condition that may exist at that time in the hospital.

Dr. John Menville suggested that a definite time limit be observed and this was moved and carried.

Dr. Jung suggested, in line with the above discussion, that literature concerning the diseases causing the deaths of the month be discussed by the staff members appointed under the above plan.

Dr. Sicomo moved that no death be discussed unless the attending staff physician be present. This caused some discordance and the discussion was tabled until the Executive Committee could determine the ruling of the American Hospital Association.

R. E. Rougelot, M. D., Sec.

GRADUATE SCHOOL
LOUISIANA STATE UNIVERSITY
MEDICAL CENTER

New Orleans

The scientific meeting of February, 1938, was called by Dr. James T. Nix, Dean of the Graduate School. Dr. Neal Owens presented the following paper:

CANCER

Cancer presents one of the most difficult problems confronting the medical profession today. It ranks second in the list of diseases responsible for high mortality, being next to heart disease. During the past year a statistical survey showed that 153,000 deaths occurred in the United States

alone as a result of this malady and one eminent authority estimated that 450,000 others now living in the United States were suffering from some form of this disease. The mortality rate from cancer in any given area in this country will equal about 10 per cent of the total deaths from all causes in that area. About 82 per cent of the deaths resulting from cancer occur between the ages of 40 and 80.

Cancer is a disease which manifests itself in a variety of ways and varies considerably in its behavior. Contrary to the belief held by many, there is no age which is free from its attack. Children are born with it and yet it is most frequently found among the aged. Some types of cancer are external, others are internal; some grow with a marked rapidity, others slowly; some spread rapidly through the body, while others remain local. All types of cancer begin as a single cell or group of cells, growing independently of the rest of the body, and serve no useful purpose. If permitted to grow unchecked, cancer is always fatal unless the host suffers death from some other cause.

An eminent authority has stated that every case of cancer is an emergency. Time is one of the most important factors in its treatment, for in many cases of cancer the stage within which a patient can be offered a cure is limited to a few weeks. A proved case of cancer is so serious that it is criminal for a patient to waste valuable time in soliciting the attention of non-medical persons who are obviously incompetent in the treatment of this disease. Many mistakes occur in the initial handling of cancer and those unfortunately usually result in death to the patient. Patients having cancer which has been diagnosed early frequently have their one and best opportunity for a complete cure at the time the cancer is first treated. Improper initial treatment of cancer frequently robs the patient of all chance for a complete cure and it is for this reason that patients should seek physicians qualified to render proper treatment at this stage.

The two principal factors which can appreciably reduce the death rate in cancer are: (1) prevention, (2) early and proper treatment. Although no known cause for cancer has ever been discovered, it is generally conceded that chronic irritation forms the background for this disease. Cancer usually does not develop in healthy tissue, but as a rule develops in organs or parts of the body affected by chronic irritation or inflammatory changes. Removal of chronic irritation, moderation in living, and avoidance of all excesses, therefore, offer three important methods in the prevention of this disease.

Cancer of the stomach is more frequently found than any other type. Although its cause is not definitely known, it has been shown that factors such as ulcer of the stomach, overeating, and dietary indiscretions in cases of individuals chronically suffering from indigestion frequently predispose to the formation of this type of cancer. Avoidance of all forms of abuse to the stomach along with medical supervision in patients suffering from chronic indigestion or unexplained gastric pain offers the best method of prevention of cancer of the stomach. Any chronic disturbance in the intestinal tract, chronic constipation, and particularly bleeding from the rectum, should call for an immediate examination by a competent physician.

Cancers of the breast are usually associated with chronic inflammation. Any lump in the breast or chronic ulceration of the nipple, particularly if associated with a discharge, is serious and should have the immediate care of a physician, since many of these, if permitted to continue, will ultimately become cancerous. It has been shown from statistics that when breast cancer is properly treated in the early stage of the disease that 70 per cent of the patients so treated are alive five years after operation, whereas if the disease is in the advanced stage, 96 per cent of these patients will not be alive at the end of five years.

Cancer of the uterus or mouth of the uterus is most frequently found in women who have borne children and it is generally attributed to a chronic ulcerative condition, resulting from former injury in childbirth. Prevention in this type of cancer requires that any injury of this organ should have proper repair. Also any unexplained bleeding, chronic discharge, or irregularity should call for a thorough examination.

Cancer of the skin and of the mouth and tongue comprise a group which can be largely classed as preventable. These growths usually result from some irritating factor, and in most instances they develop in clear view of the individual suffering from them. Chronic irritation to a mole or wart frequently results in cancer. Moles or warts which are located in areas subject to chronic irritation, as the feet, over the belt line, or in an area where they are subjected to chronic irritation from corsets or brassiere straps, should be removed at the first sign of any activity. Black, hairless moles are more dangerous than any other type and for this reason should be watched closely. Any of the last mentioned group located in areas subjected to irritation should be removed.

White spots on the lip, tongue, or cheek are precancerous and should never be subjected to irritation. The practice of applying chemical irritants to these is dangerous and should never be done. Proper removal by a sharp cutting instrument is probably the safest procedure in removing these if they persist. Any chronic sore or fissure on the lip is dangerous. Many eminent

authorities state that any ulcer or fissure of the mouth or lip which does not heal under proper management within three weeks should be removed surgically.

Cancer of the mouth and tongue usually results from bad teeth, improper dental devices, syphilis, tobacco, and other chronic irritants. They, therefore, are largely preventable. Good dentistry and oral hygiene are two of the most important factors in preventing cancer of this region. Any chronic ulcer of the tongue, mouth, or cheek should receive immediate treatment by a competent physician, and where questionable should be removed surgically.

The only correct treatment of cancer is operation, radium, or roentgen ray, applied by physicians skilled in these particular fields. The merit of these methods depends upon the type of cancer and its location. In some growths surgical procedure is indicated; in others, roentgen ray and radium are best suited, and in still others a combination of these three offers the best result. Improper and inadequate application of radium or roentgen ray to precancerous lesions can result in the formation of cancer or in permitting an early growth to advance to a hopeless stage. It is, therefore, important that any irradiation should be supplied by physicians who are specialists in this field.

Many patients with moderately advanced cancer have a feeling of hopelessness regarding the possibility of cure and quite a few refrain from availing themselves of a possible cure which is offered by radical operation because of the unsightly results. Much can be offered today in the restoration of defects resulting from the removal of cancer, even the reconstruction of major portions of the face, complete reconstruction of the nose and major defects about the mouth. Patients can now be less skeptical in subjecting themselves to eradication of cancer since they can be assured that hideous deformities need not be a necessary sequel.

HUTCHINSON MEMORIAL CLINIC

DISTURBANCES OF THE ENDOCRINE SYSTEM

Probable Hypopituitarism (Dr. L. C. Scott, Department of Preventive Medicine): The case report I wish to present is that of a girl, approximately thirteen years of age, who came into the Clinic suffering from an acute infection. This however, was not the principal condition, the main complaint being obesity and nervousness.

This girl in so far as her parentage is concerned is rather unfortunate. She has a mother who is very easily influenced and her father is an irascible individual with a violent temper. She is said to have been a four-and-one-half pound baby at birth, developing normally up to the tenth month. She is said to have walked at seven months and to have sung at nine months. The first tooth appeared at the eleventh month; otherwise she was normal. After the tenth month she began increasing in weight and has continued.

There are several points of considerable interest in the personal history of this child. She had measles at two years, diphtheria at four years, whooping cough at four and one-half years, and chickenpox at four years and nine months. She had convulsions and coma in 1929, which lasted several days. In 1930, she had scarlet fever. She has had pneumonia, pyelitis and a gangrenous appendix. An appendectomy was performed at ten years of age. An arm and leg were broken, the first about the third year, and the second about the tenth year. She has had difficulty in school, with her friends, youngest brother and mother. She cannot make friends in school, cannot get along with her teachers, and apparently hates her mother. She is very irritable, impudent and very difficult to manage; the child has developed into a neurotic subject.

Her body measurements are not normal; the upper, from pubis to vertex, is greater than the lower. The development of the genitalia is infantile. According to the history the menstrual period began at ten years although the mother informed me that it had not occurred at all. The child also had a growth on her left shoulder, which was removed by the Department of Surgery, and was pronounced to be a subaceous cyst. She has been roentgen rayed a number of times on account of a familial history of tuberculosis, and plates of the lungs have been made but are consistently negative. The head is large and round, and suggests hydrocephalus. (Roentgen rays shown).

The child's breasts are large and striated. This suggests Cushing's disease. The radiologist states that the skull is normal, and that the sella turcica is normal. There is a calcification of the pineal gland. There was a darkening in the sinuses probably because she suffered from sinus trouble.

Among the laboratory examinations, the following were noted: Erythrocytes, 6.0 million; hemoglobin 90 per cent; white blood cells normal; blood calcium 9.2 (mg.) per cent; cholesterol 153 (mg.) per cent; Wassermann and precipitin reactions negative and stool negative for parasites.

We have not been able to find anything very remarkable in the laboratory except the erythrocytosis and possibly the diminished blood calcium. This child is very heavy, she weighs 176 pounds now and she is gradually increasing in weight. She is apparently a case of hypopituitarism, not

however the usual sluggish type but is very active, plays and does not tire easily and does not sleep frequently. No films have been made of the epiphyses to see how far the ossification has progressed.

The diagnosis, at least the tentative one, is hypopituitary dysfunction involving both the anterior and posterior lobes, with possibly some parathyroid deficiency. The treatment would be injections of whole pituitary extract. It is rather remarkable that this girl tolerates quite a large amount of thyroid extract and it may be that it has an indirect reaction of some sort on other glands. It has not, however, influenced her obesity; as a matter of fact, she has increased in weight within the last few weeks. The case is not closed and we shall continue the study with plates of the bones with the hope of ascertaining the true condition.

Diagnosis: Hypopituitary dystrophy (Frohlich's disease) with possible insufficiency of the parathyroids.

Unusual Cases of Thyroid Disturbances (Dr. H. R. Mahorner, Department of Surgery:) I have three cases which I wish to present, each illustrating a difficult problem not only in diagnosis but with regard to the advisability of surgical intervention.

The first lady is 38 years of age. I am going to read her history which was given to the student by her. It is a history that is very characteristic. She complained of weakness and nervousness and she stated that her present illness began about ten years ago when she had smothering spells. At that time her doctor put her on Lugol's solution. She took this for six weeks and it helped her. Her doctor advised a thyroidectomy, which her family would not permit. For the past five to six years she has noticed a tight feeling in her neck. She began to notice that she would become tired much more quickly than usual about five years ago and later had to give up her job because she was so weak she could not work. She lost about twenty-two pounds in the last two or three years but has regained ten pounds in the last year. She says that her appetite is good, and that she eats enough for two. She perspires freely all the time and enjoys the winter more than summer. She says that she has not been very nervous until the past year and since that time she has become nervous; recently, however, she is not nervous.

When we examined her we found her relatively composed and upon questioning her closely she told us that the tight feeling in her neck was so severe that it felt "like an abscess that wants to come to a head" and if this sensation alone could be relieved she would feel "like a million dollars," and would "feel well." Her pulse rate on two occasions was 76 and 80; her basal metabolic rates have been plus 20 and plus 16.

Dr. Mahorner: Mrs. C., you told me today about that feeling on the right side of your neck. Is it a tight pressure?

Mrs. C.: Yes.

Dr. Mahorner: Do you feel that if that "abscess", as you term it, were removed that it would relieve that pressure?

Mrs. C.: Yes. The sensation extends in my right arm, also.

Dr. Mahorner: Please step up on this chair as you did upstairs.

(The patient stepped on the chair with agility and without weakness).

This patient's blood pressure was 88 mm. of mercury systolic and 60 mm. diastolic on one occasion and below 90 on another occasion. The thyroid is entirely normal in size. She presents a history that is entirely consistent with hyperthyroidism. We get a very stable pulse. It remains relatively slow and she feels too much pressure in her neck for the objective findings. We felt that whereas she presented some of the symptoms of hyperthyroidism, good appetite and weight loss, but without an enlargement of the neck, it is probably a case of chronic nervous exhaustion. We attempted a therapeutic test and Lugol's solution. She says that the medicine does not help her but that if that lump were removed she would be well. I might mention that with her tired feeling and weakness, tuberculosis was considered and a roentgen ray was made of her chest, which showed negative findings.

The second case to be presented is another interesting problem.

This lady is 58 years of age. She was referred to us from the Department of Medicine, and the history briefly is that last summer she had an attack of dyspnea and swelling of ankles and she had repeated attacks which would indicate that she had some cardiac trouble. She was examined in that Department. Her basal metabolic rate on two occasions was plus 28 and plus 38. She has a thyroid gland that is entirely normal in size. On the other hand, she has some cardiac damage, according to the Department of Medicine. She has a rapid pulse rate, today being 140. There is no electrocardiographic evidence of myocardial disease. The question comes up again: Is hyperthyroidism, or purely a cardiac change to explain her symptoms? The very rapid, labile pulse rate is significant. Another thing that is noted is the blood pressure of 160-170/112, with a very much enlarged heart. Hypertension itself can cause an elevated metabolic rate. This case apparently is one of marked hyperthyroidism.

The third case is that of a boy. This is more a problem of endocrinology that does not involve the difficult question as to whether or not we should operate on the patient. It is very definite that we should not.

He is eleven years old, and one year ago he began to have an enlargement in his neck, with apparently no other signs. In the last six months a rapid increase in the size of the thyroid gland has been noted. He talks very little.

Dr. Mahorner to patient: How long did it take you to come down here? Did it take you an hour? Did you come by train?

Patient: In a low tone of voice—"No."

That gives you an idea of the relative response that we get from him. It is difficult to understand his voice. Because of that retarded mental development we asked the Department of Neurology to see him and they gave us a very complete report on what appeared to be his condition. The child has a protuberant abdomen and has a dry skin. There is some appearance of myxedema. However, myxedema is not entirely responsible for his mental retardation. We took roentgen rays of the epiphyses to see if there was any myxedema. The roentgen rays reveal normal epiphyses. They look to me to be those of a 16 year old instead of an 11 year old child. They appear to have a tendency to early ossification. The basal metabolic rate is minus 3. The sella turcica appears to be normal. It is certainly not too large. It is possible that it is too small with a complete bridge between the clinoid processes. This boy came to the Department of Surgery with the question as to whether or not we should do anything with him. He is getting iodine daily. Dr. Golden suggests thyroid extract, in addition, which I think is a very good suggestion. Operation is not indicated for the enlarged thyroid gland as there are neither local (pressure) symptoms nor general symptoms due to his goiter. It is an adolescent (colloid) goiter in a myxedematous child.

Sugar Tolerance Test (Dr. C. R. Jones, Jr., Department of Medicine): I wish to add a little bit to the title of "Sugar Tolerance Test." I intend to talk to some extent on the clinical value of sugar tolerance tests, and discuss what we mean by the test later on.

First, there are the different types of procedure to be used. There is no one that seems to offer much advantage over others, because the value of all of them is quite small. One man prefers a certain dosage of glucose and another prefers a larger or smaller dosage, and still another prefers to regulate the dosage by the body weight. Some prefer half-hour blood samples, others one-hour blood samples. The duration of the test varies from one hour to five hours. The collection of urine samples varies with the technic of the man doing the procedure and the patient's ability to void. It is difficult to report on different procedures used by different men. There are other variables such as the site of blood collection, the technic of determining the dextrose content of the blood and urine, and the technical sincerity and ability of the one who does the dextrose determinations.

There are small groups of patients in which a dextrose tolerance test is indicated. The first of these includes the patients in whom a low renal threshold for dextrose is suspected; the second is hyperinsulinism, the only truly endocrine condition in which the procedure is of incontrovertible value though it is not indispensable. The blood sugar curve, after sugar ingestion in hyperinsulinism, will eventually descend to very low levels and really be quite typical, but if one obtains repeatedly low blood determinations at the time of hypoglycemic symptoms the diagnosis should be sufficiently clear-cut though one would be rather bound by custom to do a dextrose tolerance test.

The value of frequent blood and urine samples when renal glycosuria is suspected need not be pointed out.

The hyperglycemia of hyperthyroidism and the hypoglycemia of cretinism and myxedema are well known, but I connot imagine and certainly have never seen patients in whom these findings or lack of these findings would change the diagnosis, prognosis, or clinical course.

One can take groups of certain diseases and average the sugar curves obtained from them and perhaps show a difference from some dissimilar group, but between the different patients in one group the variations are so great that there is little of value to be obtained as far as the individual patient is concerned.

In diabetes mellitus the ordinary sugar tolerance curve is of very little value. I have no idea what is meant by pre-diabetes. The term usually is employed in reference to patients showing high or long curves and are not definitely diabetic. I have followed patients for about three years and they are still pre-diabetics, not having developed diabetes as yet. There have been similar patients reported who showed no development of diabetes after being called pre-diabetics for nine or ten years. If one takes a large group of obese patients who are old enough, he will demonstrate some reduction in tolerance. We cannot define tolerance in terms of a curve on graph paper. Several cases would, according to the curve, make you believe the glucose tolerance was low. I have been able to carry one several days on a diet containing well over six hundred grams of glucose. She showed no sugar in the urine, and had a normal fasting blood sugar each morning, and yet her "sugar curve" was of a type supposed to indicate reduced sugar tolerance.

I think the fact that glucose tolerance curves do not show glucose tolerance would indicate that we are putting more reliance on the procedure

than is justified. I have yet to see a clinically obscure case made less obscure by the determination of a "sugar curve" with the exception of the two small groups, namely, renal glycosuria and hyperinsulinism.

The Uses of Ovarian 'Follicular' Hormone in Gynecology (Dr. C. G. Collins, Department of Gynecology): There are two hormones from the ovary that are used therapeutically: (1) Follicular hormone (theelin-progynone-amniotin); (2) corpus luteum hormone (progesterone). Time does not permit me to discuss the uses of both and I have selected three cases which are characteristic and responded to the treatment with the ovarian follicular hormone.

Case I. Mrs. A. C. W., aged 52 years, was first seen in the Department of Gynecology on December 5, 1937. The menopause occurred at the age of 42. Her complaint was a slight vaginal discharge, causing burning and itching. Examination showed senile vaginitis, cervix and uterus atrophic. Treatment consisted of douches, local therapy, theelin 2000 international units on December 16, 17, 18 and 20. The patient was markedly improved on January 4, 1938. Theelin is now given twice a week. The discharge is much improved.

With the menopause there is an atrophy in the ovary which is reflected in the vaginal mucous membrane. It later becomes thinned out and loses much of the glycogen content, these factors making it very susceptible to pyogenic organisms, the Trichomonas vaginalis organisms and yeast cells. Consequently, as in this case, the basis of all of our treatment of senile vaginitis, irrespective of the causative organism, is the follicular hormone 2000 international units in oil given intramuscularly three times a week. This causes the vagina to multiply in thickness; the cells begin to contain more and more glycogen; a normal bacterial flora is established, and the membrane assumes the characteristics of a woman during a normal sexual life. Vaginal smears and biopsy will prove this. To this basic treatment are added antiseptics and local applications dependent on the type of organism causing infection.

Case II. Mrs. M. C. C., aged 46 years, was first seen in the Clinic on June 28,1937, at which time the findings were rectocele, cystocele, chronic endocervicitis, lacerated cervix, retrodisplaced uterus, and uterine fibroids. The patient was sent to hospital for operation, and returned to the Clinic November 11, 1937, five months after operation, with a history of nervousness, hot flushes since the operation and also occipital cervical headaches and vague joint pains. The patient was given bromides, 20 grains t.i.d., with no results. Theelin, 2000 international units, was then given three times a week. On January 28, 1938, the patient was practically completely relieved of symptoms.

Following castration experimental animals show a marked hypertrophy of the anterior portion of the hypophysis, the formation of which can be prevented by the use of the follicular hormone following castration. Hypophyseal transplants from gonadectomized animals are more potent in stimulating the ovaries of immature animals than are hypophyses from non-castrated animals. In the woman, as in the experimental animal, similar changes are found following castration or the normal atrophy which takes place in the ovary at the menopause. Consequently, the follicular ovarian hormone which is antagonistic to the hypophyseal sex hormone in certain concentration is given at the menopause for the relief of the distressing symptoms, in dosages of 2000 to 10,000 international units three times weekly. Once the symptoms are controlled, the frequency and amount of dosage are decreased and, as the menopause is usually transitory, stopped altogether after a period of time.

Case III. Mrs. A. C. M., aged 42 years, was first seen in the Department of Medicine on October 13, 1937. Surgical menopause occurred 19 years ago following application of radium. In the Department of Medicine the only positive finding was accentuation of pulmonic second sound. Chest plate and electrocardiogram show no evidence of heart disease. The symptoms of which she complained in the Department of Medicine (palpitation, precordial soreness, dyspnea) improved by the use of phenobarbital. On January 10, 1938, the patient complained of soreness of the breasts, which started on December 11, 1937. She stated that she had been having these attacks for the past ten years, the soreness lasting five or six months. The breasts were slightly swollen and tender. There was no definite pathology palpable or visible. A consultation with the Department of Gynecology was requested, with a diagnosis of menopausal mastitis. The patient was first seen in the Department of Gynecology on January 13, 1938, at which time the patient's breasts were so tender that she would not allow a complete examination of the breasts. The diagnosis of menopausal mastitis was confirmed. Theelin therapy was instituted. After 8000 units of theelin, the patient had improved markedly, and on January 25, 1938, when last seen, she had very little or no tenderness in the breasts.

This is a case of mazoplasia of the breasts. The physiology involved is as follows: Injection of immature animals with the follicular hormone will cause proliferation of the ducts of the mammary gland; injection of the corpus luteum hormone and anterior pituitary extract will cause proliferation of the aciner portion. In these cases of painful

breasts, the majority show small tender nodules on the periphery of the breasts. Whether this is a result of hypophyseal overactivity or an oversupply of the corpus luteum is a moot question. Irrespective of which is the cause, we know that the follicular hormone given 2000 units per c.c., one c.c. at the time the patient's breasts become painful during her active menstrual life, or two or three times a week in the post-menopause cases, will produce relief of symptoms in a number of patients thus eliminating the necessity of mastectomy in a goodly number of women. The action of the hormone in this type of case is either by inhibition of the pituitary hormone or neutralization of any excess corpus luteum hormone that may be present. Hormone therapy is not necessary in all of these cases as a good uplift brassiere will relieve a certain number of these cases without any endocrine therapy.

LOUISIANA CONFERENCE OF SOCIAL WELFARE

At a meeting held in May, 1937, the discussion centered not around the lack of adequate provision for the care of patients chronically ill in the State, but stressed the difficulty of securing antiluetic therapy in the parishes and also the prohibitive cost of transportation to and from New Orleans for those patients being treated at Charity Hospital. The discussors, and these were mainly connected with the State Department of Public Welfare, were interested in bringing these problems to the attention of the State Hospital Board in the hope that some of the money allotted for the construction of Charity Hospitals throughout the State could be used to provide anti-luetic therapy and transportation to and from New Orleans Charity Hospital. Since the conference is not an action body this suggestion was to be referred to the Gulf District of the American Association of Medical Social Workers for consideration and possible action.

Community Care of the Patient With Chronic Disease from the Viewpoint of the Medical Social Worker (Miss Louise Meyer, Social Service Department, Charity Hospital): The term chronic, as defined by a standard medical dictionary, means long continued, not acute. The major chronic diseases are: cancer, heart disease, osteomyelitis, tuberculosis, arthritis, diabetes, and certain nervous and mental diseases, but this discussion will be limited to only a few of these. In general, all of these diseases, as far as chronic care is concerned, present the same problems and difficulties, and these problems will be considered on the environmental level only. The emotional difficulties of the patient in adjusting to diagnosis and to recommendations will not be discussed.

Because life expectation is increasing and the age of the population is advancing, the medical social problems presented by chronic care are becoming more and more acute. In 1870, chronic diseases caused only one-fifth of all recorded deaths; they now account for more than half of the total mortality. Part of this increase is, of course, due to better keeping of records and to better diagnosis, but it does give some indication of the incidence and relative increase of chronic illness.

In an attempt to secure some idea of the extent of the local problem, the number of patients with chronic diseases referred to the Social Service Department, Charity Hospital, New Orleans, during March, 1937 was obtained. During this time, seventy-five from Louisiana were referred for social treatment. This number includes the new cases only, and does not take into account the patients referred during previous months who were still in the process of being treated socially. The more important problems, in arranging care for these patients, consisted of placing them where they would receive not only adequate and satisfactory care, but of establishing them in places with which both patients and relatives would be satisfied. Medical situations had to be interpreted to the relatives as well as to the patients; and, the patients had to be encouraged and helped to adjust to long time care in spite of little or no improvement in their physical condition. Unless there were adequate facilities in the community for nursing care, institutional placement, relief, boarding home care, and necessary medication, the situation was serious as far as the hospital was concerned.

Arranging for care for patients with chronic disease who are residents of Orleans Parish can be accomplished rather easily. Through the Child Welfare Association, excellent nursing care is available for those placed in their own homes or in boarding homes. If relief is needed and if the patients fail to qualify under Social Security classifications, institutional care can be arranged. The Home for Incurables accepts most patients with chronic diseases except cancer. Maison Hospitaliere is occasionally able to provide care for chronically ill patients, even patients with malignancy, if board can be paid. Touro-Shakespeare Home, which accepts white cases, and the Thomy Lafon Home, which accepts negroes, receive the bulk of institutional placement.

In the other sixty-three parishes, however, the situation is entirely different. No provision for nursing care, boarding home care, and institutional care for either white or negro chronic patients has been made. The plight of the negro chronically sick is even worse than that of white patients, because of poorer living conditions, lower wages, and

complete lack of resources within the relative group, and because there are at least ten colored to every white one. As far as the colored are concerned, if their immediate families or more distant relatives cannot provide care, the hospital has to continue to bear the responsibility. It is particularly difficult in the parishes to plan for the care of patients with cancer on account of the widespread fear that cancer is contagious.

From these illustrations it can be seen that it is not only difficult, and often ultimately impossible, but also time consuming to try to plan for the care of chronically sick patients in the parishes. The problems are, for the most part, the same. Relatives, regardless of how close, do not want to provide placement for anyone who needs special care. With the lack of any provision for boarding homes or institutional care in the community, unless relatives can be persuaded to take these patients there are no other possibilities of arranging care in the parishes. The lack of medical knowledge in the various communities makes it difficult to plan for some patients, particularly those with malignancy and tuberculosis, while further difficulty is encountered over division of authority. Very often, once a patient is admitted to Charity Hospital, the parish and relatives no longer feel any responsibility.

As care cannot be provided in Charity Hospital for patients with chronic disease, some formula must be worked out with the parishes. In this connection the following suggestions are offered:

1. Establishment of nursing service in homes. Could graduate nurses, married or unmarried living in the parish, be utilized, if necessary even on a volunteer basis?

2. Development of boarding homes in the parish. Because of the decided, although groundless, fear that cancer is contagious, this may be difficult to do as far as cases of malignancy are concerned, but it should be attempted. Could not graduate nurses in the community be interested in managing such boarding homes?

3. Use of a portion of the unfilled beds in private hospitals in the parishes. How well filled are these private hospitals? While they could not be expected to devote all of their empty beds, how many would they be willing to donate? Could the parish pay for this care even though the patient could not be classified under Social Security? Would the various hospitals provide care at the rate of $30.00 a month, the maximum amount available under Social Security? Can this provision be made for negroes?

4. Is there any possibility of arranging for placement in Touro-Shakespeare Home or Thomy Lafon Home with the parish paying for care?

5. Should additional boarding homes in New Orleans be developed so that if placement in the parish cannot be arranged, care in New Orleans would be possible? In the case of a patient with no close ties, this plan might work out very well.

Barring a state hospital for chronically ill patients, which is not at present and may never be feasible, it is not thought that the development of any one suggestion will solve the problem. But, with the promotion of all, the situation can be met to some extent and in a manner certainly more satisfactory to all concerned than it is at present. It is hoped that specific recommendations for immediate action directed toward solving the problem of community care of the chronic patient will be forthcoming from this round table discussion.

Community Care of the Patient with Chronic Disease from the Viewpoint of the Public Welfare Worker (Miss Anne Stille, State Department of Public Welfare): Since medical problems, both acute and chronic, are causing one of the most significant of the worries in the majority of the Parish Departments of Public Welfare, I welcome this opportunity to call attention to certain phases or aspects of the medical problems with reference to patients with chronic disease. As a matter of fact, it is, to my way of thinking, one of the most serious problems with which we have to cope. Why? First, because in a large number of Parish Departments of Public Welfare from 25 to 50 per cent of parish funds are being spent for medical needs for clients. In certain parishes, this percentage could, and would if additional funds were available, reach as high as 75 per cent. Why is this expenditure necessary? Because in a large number of our parishes no free hospitalization can be arranged; no free clinics are available; there are no convalescent homes; there are no Public Health Units; no attention through the Public Health Nursing Service is available; and also because in some instances the parishes do not have sufficient funds available to sponsor any one of these types of services. In addition to the above, most parishes are having, and have had, considerable difficulty in finding or in locating suitable boarding homes for patients who are chronically ill. In the majority of parishes, free hospitalization can be arranged only through Charity Hospital in New Orleans, Louisiana, and through Charity Hospital in Shreveport, Louisiana.

All cases of terminal cancer involve special arrangements and this type of case presents considerable difficulty in making the necessary arrangements for proper attention. Unfortunately, most patients with carcinoma wait too long before consulting a physician or before securing expert medical advice and in rural areas and also in cities, it is very difficult, and in many cases impossible, to persuade the client to consult a doctor or to

seek medical advice. Oftentimes, when the Parish Department of Public Welfare has arranged for an examination, the client refuses to submit to same, even after being taken to the physician's office, either because of fear or, in certain cases, from a false sense of modesty. Even after the proper treatment has been started it is very difficult, and also in many cases impossible, to persuade the client to continue the treatment advised. In brief, most patients refuse to consider or to consult a physician or to follow the doctor's recommendations until too late, that is, until after the disease has progressed too far to effect a cure or to benefit the condition very much, if at all.

As long as the patient can be sent—that is, as long as he is physically able to go for his treatment—transportation can be arranged and is being arranged and paid for by the Parish Department of Public Welfare. Unfortunately, however, increasingly large numbers of patients are being sent to charitable institutions for the various types of treatment and since this special type of case involves the arrangements for the patient's transportation and the consequent expenditure of parish funds for transportation so that the patient or patients can receive adequate treatment—as in practically all cases this cannot be arranged otherwise—an increasingly large amount of parish funds is being spent for transportation for these patients—that is, for their transportation to and from Charity Hospital. In addition, careful supervision of these cases and close follow-up is vitally essential. Our Parish Departments of Public Welfare are not equipped for this type of work as many field workers lack the medical-social worker's point of view and the resulting medical-social problems involved in such cases mean less to them.

When a cancer patient becomes confined to bed, another aspect of the problem presents itself. As the malignancy becomes gradually progressive, the patient suffers considerable pain in most cases and the physician, therefore, prescribes codeine and later morphine in increasingly large amounts. If, and when, morphine be administered by hypodermic, considerable care must be exercised in this connection. The drug must not be kept within easy access of the patient who, as the condition progresses, may have a tendency to "end it all" or "to put himself out of his misery." Also, the arrangement for the codeine and morphine, its administration and costs, must be borne by the Parish Department of Public Welfare since there are no free dispensaries or city clinics or health units through which either the codeine or morphine can be secured. Also in this connection, the services of a physician, and also usually an attendant or nurse, must be secured and all expenses for each must be carried by the Parish Department of Public Welfare.

Patients with chronic osteomyelities present difficulties also and the problem becomes more and more complex, of course, in all cases where there is considerable involvement of the bones and tissues. Recently, in one of our parishes, we faced the many problems involved in handling this type of case.

Patients who suffer from heart disease likewise present special problems and the difficulty involved, of course, varies with the type of cardiac disease and the medical-social problem to be faced. Often there are many angles to these problems.

Diabetic patients present another exceedingly difficult problem since a special diet, which is expensive, must be followed rigidly, and in almost all cases insulin must be given which also is rather costly. Also, frequent examinations in the Out Patient Department or by a reputable physician must be arranged.

Pulmonary tuberculosis also presents many problems. To be sure, the Parish Departments of Public Welfare can arrange for free examinations in most instances by providing charity rate tickets at the expense of the Parish Departments of Public Welfare; but, after the diagnosis has been determined and after the doctor's recommendations have been made, the real difficulty begins. In cases of tuberculosis, hospitalization at Dibert Memorial, Charity Hospital, New Orleans, Louisiana, can be arranged very easily, but the ability to persuade the patient to undergo the treatment advised—whether medical, in which absolute rest in bed is essential; proper treatment, including pneumothorax, and also where a high caloric diet is given; fresh air, isolation, and all the factors of hygiene and sanitation carefully followed including cleanliness of the patient and his quarters and proper disposition of sputum—is extremely difficult. In case the treatment is surgical, even more difficulty is encountered in persuading the patient to undergo a phrenecotomy or some form of thoracic surgery in order to collapse the lung and assist it in healing. Then, too, before the patient is ready to return home the family must be prepared for his coming, must be made to understand the disease; the necessity for rest, for various precautions, for frequent examinations and check up on the patient's condition; and also many other factors involved must be given attention.

If the patient refuses to enter the hospital, arrangements must be made for proper and adequate home care, whenever possible; medical attention must be arranged through a local physician; the members of the family must be periodically examined because of contact and their health safe-

guarded as closely as possible. Obviously, all this presupposes and necessitates the expenditure of considerable parish funds, requires follow-up and supervision which we are not equipped to give and since few, if any, Public Health Nurses are available in rural communities, the problem becomes more complex and rightly so, since this is a public health poblem. Last month, in one parish, the field worker discovered a woman with advanced pulmonary tuberculosis living with her husband and six children, the youngest a baby of less than two years old, all crowded up in one room in an old barn. The Public Health Nurse, at our request, visited the home repeatedly, and continued the attempt to induce the mother to enter the hospital. After considerable time and effort had been spent, we succeeded in having all of the members of the family undergo examination for contact, arranged through Charity Hospital without charge—and fortunately all examinations and roentgen rays were negative except in the case of the baby who was found to have childhood tuberculosis. The proper diet and regime were instituted for the baby and also as many precautions as possible were taken to prevent the spread of the disease in the family; high caloric diets, including one quart of milk for each member of the family, have been given at the expense of the Parish Departments of Public Welfare.

CONCLUSIONS

I urge closer and more adequate supervision of all medical problems; closer cooperation between agencies and between doctors and social workers; also, a more comprehensive understanding upon the part of Parish Directors and field workers of the problems and factors involved in arranging adequate medical care and in carrying out the doctor's recommendations and advice as to treatment and care. How can this be accomplished? Treatment through: (1) Classes—instruction in the principles and technic of case work; (2) education and instruction in medical-social problems and what problems are involved in medical cases —emphasizing certain phases of personality changes which accompany disease; (3) by conferences with other agencies; (4) by conferences with our local physicians; (5) by the addition of a well trained medical-social worker to our parish staffs; (6) by closer cooperation between agencies and medical institutions; (7) by the establishment of health units and free clinics; (8) by arranging for free local hospitalization; (9) by close follow-up and supervision through visiting nurses; (10) by the passage and observance of more strict laws pertaining to public health problems—particularly with reference to syphilis, gonorrhea, and tuberculosis; (11) through a more thorough education of our communities as to medical-social problems and of implications involved in their solution; (12) by the passage and strict observance of more adequate laws for the protection of children with reference to labor and care in the home; (13) by the establishment of convalescent homes, homes for the aged, and homes for incurables; (14) a more comprehensive understanding upon the part of the medical profession as to limitations in carrying out their recommendations. Whether we like to admit it or not, from 35 to 50 per cent of our cases present chronic medical problems and from 10 to 25 per cent of parish funds is being spent to arrange care for these cases. Also, if we could accept all of these patients, our total would reach 50 to 75 per cent of the entire case load as the larger parishes are having from six to ten chronically ill patients applying for assistance every day.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

CALENDAR

March 2. Clinical Pathological Conference, Charity Hospital and L. S. U. Medical Center, 2 p. m.
March 2. Mercy Hospital Staff, 8 p. m.
March 2. Hutchinson Memorial Clinic Staff, 8 p. m.
March 3. Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
March 7. New Orleans Graduate Medical Assembly.
March 7. Pathologic Conference, Hotel Dieu, 8:15 p. m.
March 8. New Orleans Graduate Medical Assembly.
March 9. New Orleans Graduate Medical Assembly.
March 9. Clinical Pathological Conference, Charity Hospital and L. S. L. Medical Center, 2 p. m.
March 9. Touro Infirmary Staff, 8. p.m.
March 10. New Orleans Graduate Medical Assembly.
March 11. French Hospital Staff, 8p. m.
March 14. ORLEANS PARISH MEDICAL SOCIETY, 8 p. m.
March 15. Charity Hospital Medical Staff, 8 p. m.
March 16. Clinical Pathological Conference, Charity Hospital and L. S. U. Medical Center, 2 p. m.
March 16. Charity Hospital Surgical Staff, 8 p. m.
March 17. Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

March 17. Eye, Ear, Nose and Throat Club, 8 p. m.
March 18. I. C. R. R. Hospital Staff, 12 noon.
March 21. Hotel Dieu Staff, 8 p. m.
March 22. Baptist Hospital Staff, 8 p. m.
March 23. Clinical Pathological Conference, Charity Hospital and L. S. U. Medical Center, 2 p. m.
March 24. Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
March 25. L. S. U. Faculty Club, 8 p. m.
March 28. ORLEANS PARISH MEDICAL SOCIETY, 8 p. m.
March 30. Clinical Pathological Conference, Charity Hospital and L. S. U. Medical Center, 2 p. m.
March 31. Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

During the month of February the Society held one scientific meeting. The meeting scheduled for February 28 was dispensed with because of conflict with Carnival activities. At the meeting of February 14, the following program was presented:

SYMPOSIUM ON BRONCHIOGENIC CARCINOMA

1. The Medical Aspects of Bronchiogenic Carcinoma: Dr. Chaille Jamison.
2. The Radiological Aspects of Bronchiogenic Carcinoma: Drs. E. C. Samuel, E. R. Bowie and A. D. Mayoral.
3. Bronchiogenic Carcinoma from the Standpoint of the Otorhinolaryngologist: Dr. H. L. Kearney.
4. The Pathology of Bronchiogenic Carcinoma: Dr. Bela Halpert.
5. The Surgical Treatment of Bronchiogenic Carcinoma: Dr. Alton Ochsner.

NEWS ITEMS

Members of the Society recently appointed to serve with the State Hospital Board are: Dr. James T. Nix, chairman and Dr. Rigney D'Aunoy, vice-chairman, of the medical group. Other members of this group are Dr. George S. Bel, Dr. Charles L. Brown, Dr. Joseph A. Danna, Dr. Robert A. Strong, and Dr. H. Vernon Sims. Dr. Leo J. Schoeny was made a member of the dental advisory group.

At the sixth anniversary of the opening of Flint-Goodrich Hospital, Dr. Urban Maes spoke. The secretary's report showed that during the past six years, 36,297 patients have been treated by the hospital.

Dr. A. J. Hockett was named secretary and Dr. Shirley C. Lyons a member of the board of the Hospital Service Association of New Orleans, which organization now has a membership of 766 groups with 32,300 New Orleans' people protected by contracts.

"Heart Disease in Children" was Dr. Willard R. Wirth's subject when he spoke before the Pike County Medical Society January 6, at McComb, Mississippi.

Dr. Clyde Brooks and Dr. Neal Owens attended the Northwest District of the Medical Society of Alabama, January 21, in Tuscaloosa. Dr. Owens spoke on "Reconstructive Surgery of Facial Defects" at the Seventh District Medical Society at Jennings, La., and Dr. Jack Strange talked at the same meeting on "Immunization of Children."

Dr. John Taylor Halsey was made an honorary member of the Orleans Parish Medical Society, on January 24, 1938.

At the quarterly meeting of the North Mississippi Medical Society, February 2, Dr. John H. Musser spoke on "Coronary Occlusion: Its Diagnosis and Treatment" and on "The Treatment of Pneumonia." Dr. Robert A. Strong spoke on "Erythroblastic Anemia" and "Some of the Anemias of Children."

A symposium on "Disturbances of the Endocrine System" held February 2 at the Hutchinson Memorial Clinic Staff meeting included talks by Dr. L. C. Scott on "Probable Hypopituitarism;" Dr. Howard Mahorner on "Unusual Cases of Thyroid Disturbances"; Dr. C. R. Jones, Jr., on "Sugar Tolerance Test" and Dr. Conrad G. Collins on "The Uses of Ovarian 'Follicular' Hormone."

Attending the sectional meeting of the American College of Surgeons in Houston, February 2-4 were Drs. Alton Ochsner, Roy Wright, Michael DeBakey, James T. Nix, and Neal Owens. Drs. Ochsner, DeBakey, and Howard Mahorner had scientific exhibits at this meeting.

Dr. Thomas B. Sellers addressed the Chattanooga and Hamilton County Medical Society, February 3, on "Non-surgical Treatment of Gynecological Conditions," and on February 5 spoke before the Surgical Club of Birmingham on "Endocervicitis."

Dr. John T. O'Ferrall has been named a member of the orthopedic council of the National Foundation for Infantile Paralysis. In carrying on a national battle against infantile paralysis, this foundation, created under direction of President Roosevelt, will supplement the Warm Springs Foundation.

At the last meeting of the New Orleans Gynecological and Obstetrical Society, Dr. G. D. Royston, of Washington University, St. Louis, Mo., spoke on "Puerperal Complications," Dr. Earl Conway Smith discussed "Elliott Treatment of Pelvic Inflammatory Diseases of Women as used in Office or Private Practice" and Dr. Lucien A. LeDoux's subject was "Ruptured Hemorrhagic Ovarian Follicle Complicating Acute Appendicitis—As a Case Report."

Officers of the Hotel Dieu staff elected for the ensuing year are Dr. A. D. Mouledoux, president; Dr. C. Grenes Cole, vice-president; Dr. C. E. Gorman, secretary-treasurer; Drs. T. T. Gately, Frank Chetta, P A. Kibbe, Walter Otis and D. J. Murphy, board members.

Dr. Henry B. Alsobrook was elected president of the Baptist Hospital staff, Dr. E. Z. Brown, vice-president, Dr. Robert H. Potts, secretary and Dr. Robyn W. Hardy, treasurer. Announcement was made by Dr. Louis J. Bristow, superintendent of the hospital, that the hospital commission of the Southern Baptist Convention has approved plans for increasing facilities of the Baptist Hospital so that additional nurses may be trained.

Dr. Maud Loeber was elected chairman of the Metropolitan Section of the National Council of Catholic Women.

Dr. John Oakley recently was appointed to the board of the New Orleans Travelers Aid Society.

At the recent annual meeting of the Tuberculosis and Public Health Association of Louisiana, Dr. W. H. Seemann was re-elected president and Dr. W. Harvey Perkins, first vice-president. Dr. Emile Naef was elected to the board and Dr. Robert Strong re-elected. At that time Dr. J. Arthur Myers, president of the National Tuberculosis Association, stated that thirty-eight years ago, 200 out of every 100,000 people died each year from tuberculosis, and that at the present time the number who die annually is only 60 per 200,000.

Dr. Florence Gilpin talked on "The Health Program and the School Board" at the meeting of the Henry W. Allen Elementary School Parent-Teacher Association.

TREASURER'S REPORT

Actual Book Balance: 12/31/37:	$2,743.46
January credits:	$3,541.59
Total Credits:	$6,285.05
January expenditures:	$1,742.89
Actual Book Balance: 1/31/38:	$4,542.16

LIBRARIAN'S REPORT

During January, 150 volumes were added to the Library. Of these 14 were received by gift, 7 by purchase, 108 by binding and 21 from the New Orleans Medical and Surgical Journal. Notation of new titles of recent date is given below.

The Library has loaned to doctors, during January, 1,077 books and journals, or about two to each member of the Society. An additional 947 have been loaned to students for overnight use, making a total of 2,024 for the month. These figures do not include the great use of books and journals within the Reading Rooms.

Members of the staff have collected material on the following subjects during January:

Blood dyscrasias.
Weil's disease.
Influenza.
History of parasitology.
Melanotic sarcoma.
Cholera infantum.
Eugenic sterilization.
Sterols.
Manic depression.
History of anthelmintics.
Religion and mental hygiene.
Empyema.
Ischiorectal abscess.
Polycythemia.
Cobra venom in paralysis agitans.

NEW BOOKS

Clendening, Logan: Methods of Treatment, 1937.

Ormsby, P. S.: Practical Treatment of Diseases of the Skin.

Joslin, E. P.: Diabetic Manual, 1937.

Wilder, R. M.: Primer for Diabetic Patients.

Practitioners Library of Medicine and Surgery: Supplement, 1937.

American Surgical Association: Transactions, 1937.

Association of Life Insurance Presidents: Proceedings, 1931 and 1937.

Western Surgical Association: Transactions, 1933.

U. S. Army: Annual Report of the Surgeon-General, 1937.

U. S. Public Health Service: Annual Report of the Surgeon-General, 1937.

International Congress on Military Medicine and Pharmacy, 1937.

DuBois, E. F.: Mechanism of Heat Loss and Temperature Regulation, 1937.

Todd, M. E.: Thinking Body, 1937.

Shearer, E. M.: Manual of Human Dissection, 1937.

Markowitz, J.: Textbook of Experimental Surgery, 1937.

Drinker, C. K.: Not So Long Ago, 1937.

Loewenberg, S. A.: Clinical Endocrinology, 1937.

British Medical Journal: Endocrines in Theory and Practice, 1937.

Farber, Sidney: Postmortem Examinations, 1937.

Gantt, W. H.: Russian Medicine, 1937.

Spiers, H. W.: Modern Treatment of Fractures, 1937.

American Can Company: Nutritive Aspects of Canned Foods, 1937.

Franklin, K. J.: Monograph on Veins, 1937.

Flexner, J. T.: Doctors on Horseback, 1937.

Atkinson, D. T.: External Diseases of the Eye, 1937.

Sutton, R. L.: Introduction to Dermatology, 1937.

Koch, F. C.: Practical Methods in Biochemistry.

Macleod, J. J. R.: Physiology in Modern Medicine, 1938.

Gilbert C. Anderson, M. D.,
Secretary.

LOUISIANA STATE MEDICAL SOCIETY NEWS

THE 1938 STATE MEETING

To the Members of the Louisiana State Medical Society: In behalf of the members of the Orleans Parish Medical Society, I wish to call your special attention to the meeting of the Louisiana State Medical Society to be held in New Orleans May 2, 3 and 4, 1938, and invite you to make every effort to be present.

The committees in charge have arranged an excellent scientific program, and the social program promises to be up to the usual high plane.

We consider it a privilege to have the Society with us, and will look forward to a large meeting.

We expect and urge each of the guests to use the members of the Orleans Parish Medical Society freely during their visit here.

Sincerely yours,
Shirley C. Lyons, M. D.,
President.

New Orleans and the members of the Orleans Parish Medical Society extend greetings and a very cordial invitation to attend the meeting of the Louisiana State Medical Society to be held May 2-4 with headquarters at Roosevelt Hotel.

The scientific program is to be on new subjects carefully arranged so that one section will not interfere with the other. The program promises to be most interesting and will be discussed by leaders of the medical profession. In addition to this, ample time will be given to the general discussion so that everyone may express himself. Many of the essayists have new moving pictures and slides; these are most instructive. Much attention has been given to details which mean so much to the audience. Meeting rooms with excellent acoustics and lighting facilities will be used.

The committee on scientific exhibits is now arranging for one of the best if not the best that ever been presented here. The entire field of medicine, including the specialties, will be represented and few, if any exhibits, have been shown before. No one should miss this.

Our commercial exhibitors will show the latest in surgical instruments, medical books, drugs and pharmaceuticals. Some that you have been reading about can now be seen first hand, and with literature and reprints for the asking. Many local firms will have booths with us and will have on display numerous things of special interest to the medical profession.

The most talked of subject today is "State Medicine." What to do and how to do it is the question of the hour. Everyone agrees that "Organized Medicine" is the only solution and therefore we beg of you to attend this meeting better to acquaint yourself with something that may alter not only your future but that of many of those depending on you. At this time you will have the opportunity of talking this over, with not only the leaders in our state, but many from outside. Every doctor should be here to discuss this subject. It is your opinion and help that will solve the question and we must have your cooperation.

Plans are also under way to give something different in the form of entertainment. It is understood that a dance will be given Tuesday night for visiting members and their ladies in the Grand Ball Room. This will be after the President's Reception. I would like to say more about this but have been forced into secrecy. Of course, we will not forget our old friend golf. Several courses are now open, both private and public, and will be available Sunday and during the week. If you can spare any time from scientific meetings and the exhibits, there will be more than enough entertainment to keep you busy.

New Orleans today is an entirely different city from even two years ago, but I will not attempt to go into detail about the many interesting things to be seen. It is to be doubted if anyone has visited all places of interest unless he has exceeded the time usually spent in this way. Many of the things that may be viewed today have been completed within the past eighteen months. Others which might have been overlooked will be mentioned for your information. The new water purification

plant on Claiborne Avenue will be open to visitors; this is the largest of its kind in the world. There are many additions to Audubon and City parks, with their excellent golf courses, tennis courts, swimming pools, extensive improvements, flower beds, shrubs, and trees. The new stadium at City Park and the museums will be of interest to every one. Lake Shore Drive, with bathing beaches, extends for several miles along Lake Pontchartrain and affords, for the first time, a long, delightful ride where one may get a view of this beautiful body of water. Farther on is the new famous Shushan Airport. This is well-worth a visit. The rebuilt French Market, in which the old architecture as been retained, must be seen. Here one will find all kinds of fruit and vegetables, domestic and foreign; sea foods, flowers and many other things never found elsewhere. The Cabildo, which has just undergone a complete overhauling, is open daily with attendants to show visitors around. It will take about one week to go through this. The old St. Louis Cathedral, Jackson Square, and remodeled Pontalba Buildings are within easy walking distance. The always charming Vieux Carré is even more so now with its shops, both antique and modern, flower gardens, court yards and famous old houses and buildings. Many of these have been done over and present some very novel ideas.

Canal Street, the widest business street in America, with its brilliant lighting and many new stores is waiting to greet you. There are miles of new streets with beautified neutral grounds full of azaleas, camellias, shrubs, flowers and trees which bloom the entire spring and summer; many visitors travel hundreds of miles to view these and the many beautiful public and private flower gardens.

Fort Pike on Chef Menteur Highway has just been done over; also Chalmette National Park in St. Bernard Parish. Across the highway from this is the Skeet Club and National Guard Rifle Range. Close by is the largest sugar refinery and the banana wharves; farther down the highway will be found Packenham place with its famous oaks. A short distance from here on the east bank of the river, are the large orange groves. Some of the old rice and sugar plantations are still recognizable and, if interested and weather favorable, one may go a short distance to Austrica, in which place, a great part of the story "Green Margins" was written. Across the river are Old Fort Jackson and the real orange country of Louisiana. Returning to the city, it may be interesting to leave the main highway for the river road and see Belle Chasse. Nearby are docks of the Sea Train where several trains of cars are put aboard ships bound for American and foreign ports. Visitors are also cordially invited to inspect the United States Quarantine Station. But, I have mentioned so many places that it will surely take weeks for you to see them all.

New highways have been opened from all sections. Today, even from the farthest part of the state, it is only a few hours, ride by automobile to New Orleans. Trains arrive and depart regularly. We will gladly furnish you with information and reservations. As this will be our best meeting, may not we have a "Doctors Take a Holiday" and then meet here for a most excellent time in every way. As no convention today is complete without your wife, she has of course been included in this invitation as you may have already surmised.

C. L. Peacock, M. D., Chairman,
Committee on Arrangements.

DR. HARRISON HONORED

Dr. Roy B. Harrison, one-time president of the Louisiana State Medical Society, was honored by being selected as president of the Federation of State Medical Boards in Chicago, February 5. For many years now as secretary of the State Board of Medical Examiners he has been largely responsible for many policies of the State Board. Always, Louisiana has had one of the outstanding boards of the country, which has been noted for its advanced stand on many of the problems of examining boards. Louisiana has been a leader and the man responsible for this leadership has been made president of the Federation of State Medical Boards as a recognition of his delightful personality and splendid executive abilities.

BI-PARISH MEDICAL SOCIETY

The Bi-Parish Medical Society meeting was called to order by the president, on February 2, in the East Louisiana State Hospital at Jackson. Following a delicious dinner in the hospital dining room, the scientific session was held in the staff room. Drs. W. E. Kittredge and J. W. Warren, of New Orleans, were guests of the society, and read excellent and instructive papers. Dr. Kittredge gave a discussion of urinary calculi and presented an exhibit of different types of stones. Dr. Warren spoke on hemorrhoids and rectal fissure. Both subjects were discussed favorably by physicians present.

The next meeting of the society will be the first Wednesday in April at the East Louisiana State Hospital.

FIFTH DISTRICT MEDICAL SOCIETY OFFICERS

1938

President: Dr. W. H. Hamley, Lake Providence.

First Vice-President: Dr. E. O. Edgerton, Tallulah.

Second Vice-President: Dr. Ralph Talbot, Monroe.

Secretary-Treasurer: Dr. R. Morgan Simonton, Monroe.

RAPIDES PARISH MEDICAL SOCIETY
OFFICERS
1938

President: Dr. D. C. McBride, Alexandria.

First Vice-President: Dr. I. F. Littell, Alexandria.

Second Vice-President: Dr. James Welch, Alexandria.

Secretary-Treasurer: Dr. J. A. White, Jr., Alexandria.

Delegates: Drs. H. O. Barker, Marion H. Foster, and J. A. White, Sr., all of Alexandria.

NEWS ITEM

Mr. E. Holt Gurney, President of the American Society of Heating and Ventilating Engineers, will speak on Thursday, March 3, at 8 p. m. at Gibson Hall on "Air Conditioning Brings Human Problems to the Engineer." This paper will deal with the effect of air conditioning on human health and should be of interest to the medical profession. Mr. Gurney is one of the outstanding ventilating engineers in the United States and Canada. During the World War he was Director of the Imperial Munitions Board from 1917-19.

The Eye, Ear, Nose and Throat Club had as its guest speaker, at the meeting on Wednesday, February 22, Dr. Arthur Q. Penta, Visiting Lecturer of Medicine, Temple University, and Lecturer on The Relationship of Oral Infection to Systemic Diseases, Temple University School of Dentistry. His subject was "The Oral Spirochetes and Associated Anaerobes in Pyorrhea and Pulmonary Suppuration."

Dr. Alton Ochsner, of New Orleans, will give the C. Jeff Miller Memorial Lecture at the Southeastern Surgical Congress in Louisville, Kentucky, on March 7. His subject will be "Thrombophlebitis." The lectureship honoring the memory of Doctor Miller was authorized by the Executive Council, June 18, 1936, for his contribution to surgery, his public benefactions and his untiring work for, and his interest in, the Congress.

Dr. Isidore Cohn,, Professor of Surgery and Associate Director of the Department of Surgery, Graduate School, Louisiana State University Medical Center, attended a meeting of the Fracture Committee of the American College of Surgeons in New York City on February 15, 1938.

Dr. Cohn will be one of the guest speakers at the Southeastern Surgical Congress in Louisville, March 7-9, and at the meeting of the Mississippi State Medical Society in April.

Dr. T. J. Dimitry attended the sectional meeting of the American College of Surgeons at Houston, Texas, February 2-4. He and Dr. John McReynolds of Dallas, Texas, conducted a symposium on the surgery of the pterygium.

Dr. Charles James Bloom, Professor of Pediatrics and Director of the Department, Graduate School, Louisiana State University Medical Center, was a guest speaker at the Arkansas Medical Society Postgraduate Assembly, which was held in Little Rock, on January 19 and 20, 1938.

Dr. John H. Musser addressed the Thirty-fourth Annual Congress on Medical Education and Licensure in Chicago, Tuesday, February 15. His subject was "The Training of the Future Internist."

Dr. Isadore Brickman has been appointed superintendent of the State Colony and Training School at Alexandria.

The Third Annual Postgraduate Institute, offering an intensive and interesting study of the Diseases of the Digestive Tract, will be conducted by The Philadelphia County Medical Society from March 28 to April 1 inclusive.

The medical staff of the Menninger Clinic will conduct its fourth annual Postgraduate Course on Neuropsychiatry in General Practice, April 25-30, inclusive, at the Menninger Clinic, Topeka, Kansas. The course this year will include a brief introduction to the fields of neurology and psychiatry and a specific application of this knowledge to the large group of cases of psychoneuroses, psychoses and psychogenic and neurologic disorders which every physician meets in his daily practice.

As in previous years, several guest speakers, prominent in the fields of neurology and psychiatry, will appear at the evening sessions of the course.

The Journal is in receipt of a letter from a young physician who would like a place in Louisiana (town or village of 2,000 or 3,000). He is licensed to practice in the State of Louisiana and has previously taught for four years at the Louisiana State University Medical Center.

There is need for a physician in Raceland, Louisiana, due to the death of Dr. W. J. Eroche, who practiced in that location for twenty-eight years. Mrs. Eroche has a drug store with doctor's office and waiting room available for physician in-

terested. Prefer young man who can speak French; however this is not essential.

There is an immediate opening for a physician in Monticello, Florida. Anyone interested please communicate with Richard H. Simpson, mayor of this town.

LEWIS MEMORIAL NIGHT

The Ernest S. Lewis Memorial Night on March 14, given by the New Orleans Gynecological and Obstetrical Society in joint session with the Orleans Parish Medical Society, is the outstanding meeting of the year.

Dr. Chipman is making a special trip from Montreal for this meeting, as it will be in memory of his very close friend, Dr. C. J. Miller. His subject will be John Hunter, the first scientific surgeon.

AMERICAN MEDICAL ASSOCIATION MEETING

Passenger traffic to San Francisco for the American Medical Convention June 13-17 will be very heavy from the southern states according to advice from A. C. Ziegan, District Passenger Agent of the Southern Pacific Lines. Special trains from Florida, Alabama and other states are being arranged and these trains will be routed via New Orleans and Southern Pacific, to leave New Orleans at 11:00 p. m. June 6 with short stop at San Antonio and two days at Los Angeles. In addition, the Southern Pacific is now making reservations on the regular California trains, the Sunset Limited and the Argonaut. Delegates can leave New Orleans as late as June 10 and arrive in San Francisco on the morning of June 13, the opening day. All arrangements are being made to cover the transportation features such as round trip railroad and Pullman tickets, special sightseeing trips and National Park trips. Full information and complete itineraries will be prepared to fit each individual case upon application.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The general oral, clinical and pathological examinations for all candidates (Group A and B) will be conducted by the entire Board, meeting in San Francisco, California, on June 13 and 14, 1938, immediately prior to the meeting of the American Medical Association.

Application for admission to the June 1938 Group A examinations must be on an official application form and filed in the Secretary's Office before April 1, 1938.

The annual informal Dinner and General Meeting of the Board will be held at the Palace Hotel, San Francisco, on Wednesday evening, June 15, 1938, at seven o'clock. Dr. William D. Cutter, Secretary of the Council on Medical Education and Hospitals of the American Medical Association will be the guest speaker, and the Diplomates certified at the preceding days' examinations will be introduced individually. All Diplomates are invited to attend the dinner meeting, and to bring as guests their wives and any persons interested in the work of the Board.

For further information and application blanks address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pennsylvania.

AMERICAN BOARD OF OPHTHALMOLOGY

The American Board of Ophthalmology announces that in 1938 it will hold examinations in: San Francisco, June 13, during the American Medical Association; Washington, D. C., during the American Academy of O. and O. L.; Oklahoma City, November 4, during the Southern Medical Association.

Up to the end of 1937, the Board has held fifty-six examinations and had certified 1,498 ophthalmologists. The Board, on January 1, 1938, issued a new and complete list of physicians certified to date, arranged geographically. This list was mailed gratis to all certificated persons and to over two hundred and fifty hospitals and institutions.

The American Board of Ophthalmology has established a Preparatory Group of prospective candidates for its certificate. The purpose of this group is to furnish such information and advice to physicians who are studying or about to study ophthalmology as may render them acceptable for examination and certification after they have fulfilled the necessary requirements. Any graduate or undergraduate of an approved medical school may make application for membership in this Group. Upon acceptance of the application, information will be sent concerning the ethical and educational requirements, and advice to members of the Group will be available through preceptors who are members or associates of the Board. Members of the Group will be required to submit annually a summarized record of their activities.

Applications should be filed immediately. Required number of case reports must be filed at least sixty days prior to date of examination. Application blanks can be procured from: Dr. John Green, 3720 Washington Ave., St. Louis, Mo.

HEALTH OF NEW ORLEANS

The Department of Commerce, Bureau of the Census reports that for the week ending January 15, there was a sharp increase in the number of deaths in the city as contrasted with that of January 8. Two hundred and three citizens of New Orleans expired in this week of whom 129 were white and 74 negro. Infant mortality was high as well; twenty-one deaths in infants under one year of age occurred at this time, divided 11 white

and 10 negro. There were 16 less deaths in the week ending January 22, largely as the result of 14 less negro deaths, there being 60 of these as contrasted with 127 white. Seventeen infant deaths occurred, of which 10 were in white and seven in negro babies. For the week ending January 29, the death incidence was approximately the same as the previous week, with a slight decrease to 122 deaths in the white population and increase to 70 in the negro. Twenty-one infants died this week, most of them being colored. For the last week for which reports are available, there was a total of 182 deaths, divided 109 white and 73 negro. Infant mortality was 12 only, two-thirds white and one-third negro. Apparently, the number of deaths in New Orleans this year is considerably higher than last year. So far for the first five weeks of the year, there were 927 deaths, whereas last year in the same period, there were only 825 residents of New Orleans who expired.

INFECTIOUS DISEASES IN LOUISIANA

Dr. J. A. O'Hara, epidemiologist for the State of Louisiana, has furnished us with the weekly morbidity reports for the state, which contain the following summarized information: For the third week of the year, ending January 22, syphilis led all other reportable diseases with 149 instances, followed by 69 cases of pneumonia, 30 of gonorrhea, 29 of pulmonary tuberculosis, 27 of cancer, 26 of influenza, 22 of scarlet fever, 15 of diphtheria and 14 of typhoid fever. Caddo and Orleans each reported four cases of typhoid fever. Of the unusual diseases, three cases of smallpox were reported, one in Beauregard, one in Caddo and one in Sabine Parish. Two cases of typhus fever were reported, one each in East Baton Rouge and St. Helena. There were also two cases of tularemia listed in this week. For the fourth week of the year, syphilis, as is its custom, led the reportable diseases with 203 cases, followed by 61 of pneumonia, 26 of gonorrhea, 22 of influenza, 19 of pulmonary tuberculosis, 16 of scarlet fever, 13 each of cancer and chickenpox, and 10 of diphtheria. Other diseases, not occurring in figures greater than 10, are not listed in these notes. It is interesting to observe that there were three cases more of tularemia reported and another of typhus fever, again from East Baton Rouge. One case of poliomyelitis originated in Orleans Parish. There was a considerable drop in syphilis and pneumonia, which led the other listed diseases for the previous two weeks, in the week ending February 5: syphilis fell to 78 and pneumonia to 51 cases. There were as well reported 29 cases of pulmonary tuberculosis, 24 of influenza, 16 of cancer, 15 of scarlet fever, 14 of gonorrhea, 12 of diphtheria and 11 of typhoid fever. Five of these typhoid fever cases were from Caddo, two from Franklin and two from Lafayette. Of the rare diseases, there were two cases of undulant fever on the list, one each from East Baton Rouge and St. James. The number of cases of syphilis jumped up to 190 in the week of February 12, and pneumonia increased to 60 cases. There were listed as well 44 instances of influenza, 38 of pulmonary tuberculosis, 23 of chickenpox, 19 of whooping cough, 16 of cancer, 14 of scarlet fever, 11 of gonorrhea and 10 of pellagra. Orleans Parish reported a case of leprosy and one of paratyphoid fever, while Madison had a new case of tularemia.

HEZZIE D. BULLOCH, M. D.

Dr. Hezzie Donice Bulloch, died at his home in Covington on January 31, 1938, from coronary occlusion. He was fifty-three years of age. He had been ill for the past three years and retired from active practice, but was very active in both parish and state medical societies.

Dr. Bulloch was graduated in medicine in 1903 from the Medical Department of the University of the South at Sewanee, and, upon graduation, practiced in Washington Parish, later moving to Folsom and then Covington. He was one of the charter members of the St. Tammany Parish Medical Society when it was organized in 1903. On two different occasions he was elected and served as president of the parish society. For many years he was secretary-treasurer and this office was always unanimously voted to him because of his efficient service.

Dr. Bulloch married Miss Elizabeth Verna Brazelton of Sewanee in 1903. He is survived by his father, wife and one son, Donice Bulloch, and four grandchildren.

He was a 32nd degree Mason and a Knight Templar, and was very active in Masonic circles. He served as Coroner of St. Tammany Parish for over seventeen years. Dr. Bulloch was noted for his geniality, sincerity, friendship and lovable character, as well as his ability as a physician.

WOMAN'S AUXILIARY
Louisiana State Medical Society

President—Mrs. George D. Feldner, New Orleans.

President-Elect—Mrs. Frederick G. Ellis, Shreveport.

First Vice-President—Mrs. Joseph P. Brown, Monroe.

Second Vice-President—Mrs. Walter Moss, Lake Charles.

Third Vice-President—Mrs. Robert Bernhard, New Orleans.

Fourth Vice-President—Mrs. E. A. Campbell, Homer.

Recording Secretary—Mrs. William B. Heidorn, Shreveport.

Corresponding Secretary—Mrs. Aynaud F. Hebert, New Orleans.

Treasurer—Mrs. Cassius L. Peacock, New Orleans.

Parliamentarian—Mrs. John T. Crebbin, Shreveport.

FLASH!

IMPORTANT TO ALL AUXILIARY MEMBERS!

The dates of the annual meeting of the State Society to be held in New Orleans have been changed from April 25-27 to May 2-4, 1938.

Plans for the above meeting are well under way now, and under the very able guidance of Mrs. S. Chaille Jamison, Chairman, a very interesting and pleasant time and a very cordial welcome awaits visitors to the convention. Do plan to attend. Following is the tentative program:

ANNUAL MEETING

Headquarters

Roosevelt Hotel

Registration Desk—Lobby, First Floor

Mrs. S. Chaille Jamison.....General Chairman
Mrs. Shirley C. Lyons.....Vice-Chairman

HONORARY COMMITTEE

Mrs. Joseph A. O'Hara — Mrs. George D. Feldner
Mrs. Jules Myron Davidson — Mrs. C. Grenes Cole

COMMITTEES

Registration.....Mrs. C. Grenes Cole
Information.....Mrs. J. W. Warren
Tickets.....Mrs. Paul G. Lacroix
Printing.....Mrs. Isidore Cohn
Publicity.....Mrs. S. M. Blackshear
Exhibits.....Mrs. Jerome Landry
Transportation.....Mrs. Cassius L. Peacock
Telephone.....Mrs. Donovan C. Browne
Style Show.....Mrs. Jules Myron Davidson
Luncheon.....Mrs. William Kohlman
Breakfast.....Mrs. George Taquino
Tea.....Mrs. Edgar Burns
Flowers.....Mrs. Daniel Silverman

PAGES

Mrs. C. P. Cabibi — Mrs. Bernard G. Efron
Mrs. Guy Caldwell — Mrs. John S. Herring
Mrs. Charles R. Hume

PROGRAM

Monday, May 2, 1938

Registration.....Local Women
8:00 p. m.....Open Meeting

Tuesday, May 3, 1938

10:00 a. m. Pre-Convention Executive Board meeting, Roosevelt Hotel, Mrs. George D. Feldner, President, presiding.
Invocation.

12:30 p. m. Luncheon and Style Show, Blue Room, Roosevelt Hotel, Toastmistress, Mrs. S. M. Blackshear.

8:00 p. m. Open meeting and President's Receception, Roosevelt Hotel.

Wednesday, May 4, 1938

9:00 a. m. Breakfast.....Rose Room, Jung Hotel

10:30 a. m. General Session of Auxiliary, Mrs. George D. Feldner, President, presiding.
Invocation.
Welcome Address: Mrs. H. Theodore Simon.
Response to Address of Welcome: Mrs. Roy Carl Young.
"In Memoriam": Mrs. Hermann B. Gessner.
Reading of the Minutes.
Reports:
State Officers.
State Committees.
Parish Auxiliaries.
Special Committees.
Report of Woman's Auxiliary to American Medical Association.
Report of Woman's Auxiliary to Southern Medical Association.
Unfinished Business.
Recommendations of Executive Board.
New Business.
Report of Nominating Committee.
Election of Officers.
Introduction of New Officers.
Announcements by New President: Mrs. Frederick G. Ellis.
Adjournment.

2:00 p. m. Post-Convention Executive Board Meeting, Roosevelt Hotel, Mrs. Frederick G. Ellis, President of Auxiliary to Louisiana State Medical Society, presiding.

4:00 p. m. Tea—New Orleans Country Club, in honor of Mrs. Frederick G. Ellis, President, Woman's Auxiliary to Louisiana State Medical Society.

ATTENTION LADIES!

The above-mentioned style show is being given through the courtesy of Gus Mayer Co., Ltd. Do not purchase your summer wardrobe until you have seen this show!

OUACHITA PARISH

The Woman's Auxiliary to the Ouachita Parish Medical Society held its regular monthly meeting Wednesday, February 9, at the Lotus Club. A class for the board members was organized in parliamentary procedure, and was well attended. Mrs. A. D. Tisdale is conducting the class.

The Chairman of Hygeia reported that twenty-nine subscriptions had been obtained, this being the largest number that Ouachita has ever reported.

A contribution was made toward the memorials of two of our beloved members, Mrs. Sadler and Mrs. Yancey.

Dr. Byron Vaughan gave an enlightening discus-

sion on "Socialized Medicine," a subject which is being greatly discussed at the present time. Mrs. A. D. Tisdale's review of "The Citadel" by Cronin was most interesting as well as educational.

Plans were discussed for the celebration of "Doctor's Day" in March.

Mrs. DeWitt T. Milam,
Publicity Chairman.

ORLEANS PARISH

The February meeting of the Woman's Auxiliary to the Orleans Parish Medical Society was held on Wednesday, February 9, at the Orleans Club with a very large attendance.

Plans were formulated for Doctor's Day, which promises to be an unusually gala event in the form of an Italian dinner, in the beautiful new Tulane Room at the Jung Hotel on Wednesday, March 30, at eight o'clock, with a good dance orchestra and floor show. All members of the Parish Society are invited to attend.

Miss Jessie Tharp read a most interesting play, "Yes, My Darling Daughter."

The Tuberculosis Committee, of which Mrs. Hermann B. Gessner is chairman, is doing outstanding work in health education. The work began with some excellent publicity in the New Orleans Item which included a large picture of our poster. This article was also translated and carried out in its entirety in the Italian paper "La Voce Coloniale." The posters bearing our message have been placed throughout various department stores, banks, insurance companies, mills, as well as public, private and parochial schools in the city. Speakers have been appointed from the Parish Medical Society by the president. It is through specially selected men that this information is disseminated to groups of people all over the city. The moving pictures are furnished through the National Tuberculosis Society to accompany these interesting lectures. We want to take this means of thanking the various doctors who have given their valuable time to speak for us, and also the many doctors who have lectured on social hygiene as part of our educational program. The committee is composed of Mesdames Gessner, J. W. Warren, Ernest Faust, Chapman Reynolds, J. N. Ané, William J. Healy, W. H. Harris, H. J. Schattenberg, J. E. Isaacson, Joseph LaNasa, Mannie Mallowitz, and Jules Myron Davidson.

Mrs. S. M. Blackshear,
Publicity Chairman.

An Executive Board meeting of the Woman's Auxiliary to the Louisiana State Medical Society was held in New Orleans on Wednesday, February 16, at the Roosevelt Hotel. The President reports many interesting and important questions were discussed and action taken thereon.

Mrs. Lucian W. Alexander, Chairman,
Press and Publicity.

BOOK REVIEWS

The Therapeutic Problem in Bowel Obstruction: By Owen H. Wangensteen, B.A., M.D., Ph.D. Springfield, Charles C. Thomas, 1937. Pp. 360. Price $6.00.

This is an excellent book written by a worker who, greatly interested in intestinal obstruction, contributed much through personal observations and investigations in this field. In presenting the therapeutic problem in bowel obstructions so thoroughly, as does the author of this book, the scope of the work actually exceeds the limitations indicated by its title, for, in developing the therapeutic indications, the important physiologic and pathologic changes occurring in intestinal obstruction are portrayed extensively. This volume might well be read by internists as well as surgeons.

AMBROSE H. STORCK, M.D.

International Clinics: Vol. III, September, 1937. Philadelphia, J. B. Lippincott, 1937. Pp. 328. Price $2.50.

This volume contains medical clinics at the Johns Hopkins Hospital in addition to excellent articles dealing with several aspects of tuberculosis and syphilis. Essays pertaining to diseases of the heart, lungs, circulation and the endocrines are both interesting and important in their timeliness, with references to present day problems in medicine. To the members of the local profession there is an artivle entitled, "Diabetes—What of the Future," by the late Dr. I. I. Lemann.

I. L. ROBBINS, M. D.

The Laboratory Diagnosis of Syphilis: By Harry Eagle, M. D. St. Louis, C. V. Mosby Company, 1937. Pp. 440. Price $5.00.

Ever since Bordet first described the phenomenon of complement fixation and Wassermann applied it to the diagnosis of syphilis, volumes have been written about the serologic diagnosis of lues. Again another book is added to the well stocked bibliography on the subject, but this time Dr. Eagle's book is a very valuable addition.

The material in this book has been well arranged; it is divided into six parts and several appendices. The Wassermann reaction, the flocculation tests and the examination of the spinal fluid are discussed in detail; the common sources of error

are not only pointed out to the serologist, but also means of avoiding them are described. The clinical evaluation of the serologic report comprises an important section; it is this part which should be of value to the physician.

There is scarcely a serologic test that is so widely used as the Wassermann reaction in the diagnosis of syphilis. It is an everyday word to thousands of practicing physicians and laboratory workers, but few of them know how it works, its pitfalls and its limitations. Dr. Eagle's book gives, in a few hundred pages, the most complete, thorough and simple way of understanding the serology of syphilis.

ALBERTO PRIETO, M. D.

Tumors of the Nervous System—An Investigation of the Most Recent Advances: By The Association for Research in Nervous and Mental Disease. Baltimore, Williams and Wilkins Co., 1937. Pp. 493. Illus. 213. Price $7.50.

This is the sixteenth volume to be published by the Association for Research in Nervous and Mental Disease since 1920. In Chapter I, Bland and Russell describe the culturing of cells from three types of cerebral gliomas. The growth and behavior of these cells were recorded and studied by means of motion pictures. In the next two chapters, Wortis deals with the metabolism of nervous tissue, and Victor and Wolf report on the metabolism of nervous tissue, and Victor and Wolf report on the metabolism of brain tumors. Weil and Liebert present their initial studies on the antigenic properties of brain tumors in the fourth chapter. In Chapter 5, Frazier and Alpers record the results of a symposium on the irradiation of gliomas: Medulloblastomas are the most radiosensitive of the glioma group; the astrocytomas and ependymomas respond to a lesser degree; it is concluded that most tumors have received inadequate dosages. Elvidge, Penfield and Cone present a detailed study of 210 cerebral gliomas and suggest some changes in classification. In the seventh chapter, Kernohan and Fletcher-Kernohan give an histologic analysis of 109 ependymomas which occurred in the nervous system or in the hollow of the sacrum. In the next division Globus propounds a theory on the origin of meningiomas and recommends a simpler classification. Chapter 9 by Alexander deals with tumors and cysts of the cerebellopontine angle. Fremont-Smith writes the next section on the cerebrospinal fluid in brain tumor. He emphasizes the danger of lumbar puncture in patients with obvious brain tumor and points out that there is no single spinal fluid picture which is characteristic of cerebral neoplasm. In the eleventh chapter Elsberg briefly describes his new method of olfactometry and its application to the localization of brain tumors. Four of the remaining chapters (Dyke, Davidoff, Waggoner, Lowenberg, Stout, Laidlaw, Haagensen, Adair and McLean) are studies of tumors of the peripheral nerves and of the brain. Chapter 14 by Eisenhardt on the survival period in cases of brain tumor is the most interesting in the volume to readers not directly concerned with neurology. The author has followed the patients operated upon by Cushing and finds 503 who have survived at least five years, the longest survival period being twenty-eight years.

DEAN H. ECHOLS, M. D.

Physiological Chemistry of the Bile: By Harry Sobotka. Baltimore, Williams & Wilkins Co., 1937. Pp. 202. Price $3.00.

This book of 202 pages is divided into eight chapters covering the subjects of hepatic secretion, the quantity of bile secretion; the composition of bile divided into three chapters, one on the bile acids, another on other normal constituents, and a third on detoxication; one on the modification of bile flow as affected by various injections, one on the occurrence of bile acids outside the biliary tract, and a final one on the effects of bile acids as functions of their presence in the digestive tract. There is an adequate index and a bibliography of about 1200 references.

The appearance of this review of the literature is timely. There is a growing appreciation of the importance of the phenanthrene nucleus as a structural unit common to a wide variety of substances related to the growth processes, and an assembling of widely scattered publications in a field such as this is a welcome service.

It should be noted that the author has presented more of a survey of the literature than a critical appraisal of it. It is to be followed immediately by a companion volume on the chemistry of the sterids, which will complement the present volume and in a sense complete it.

SIDNEY BLISS, M. D.

Neurology: By Roy R. Grinker, M. D. Springfield, Ill., and Baltimore, Charles C. Thomas. 1937. Pp. 999. Price $8.50.

The first edition of this work appeared three years ago. It proved of distinct value. This, the second edition, is equally welcome and will be found of greater value.

It is to be noted that the title of this work is "Neurology." We have had in the past and have at the present time many volumes entitled "Textbook of Nervous Diseases," "Clinical Neurology," "Diagnosis of Nervous Diseases," many of them excellent books treating the subject of neurology in one or other of its fields of interest. None, however, presents the views of modern clinical neurology, as a whole, as does the present volume. It

does not satisfy itself with the descriptions of signs and symptoms of nervous diseases, the location of the lesions and probable pathologic changes in their explanation, but it takes a much broader view of neurology and presents it as a part of biologic data, which are considered of importance to the study of the human nervous system in health and disease. It will help the student to appreciate more and more the relationship between structure and function and finally help him to visualize human nervous functions and their disorders better because the effects of diseases, as herein presented, are based on disordered morphology and physiology.

Anatomic, embryologic and physiologic considerations introduce the subject of many of its thirty chapters. The varied and difficult pathways are made clear by numerous diagrams. More than four hundred illustrations are found within its covers. They are original, clear and many picture the extensive clinical material from the author's clinics in the University of Chicago. Apart from an extensive index, the end of each chapter is followed by numerous references in the literature of the subject treated. Chapter seventeen on intracranial tumors is followed by as many as one hundred and twenty references. All of this adds considerably to the value of the work, which presents a most comprehensive view of modern neurology.

The publishers are to be congratulated on the quality of the materials used in this volume and the clearness of the illustrations and types.

L. L. CAZENAVETTE, M. D.

A Textbook of the Practice of Medicine: By various authors, edited by Frederick W. Price, M. D., C. M., F. R. C. P., F. R. S. (Edin.). London, Oxford University Press, 1937. Pp. 2038. Price $12.50.

This is an excellent textbook, containing accurate and remarkably complete accounts of most of the medical diseases. Its completeness, as well as the inclusion of hundred-page sections on diseases of the skin and psychologic medicine, necessitates the use of small print and thin paper to get all of the material into a single volume; even so, the book is of excessive thickness, containing more than 2000 pages. The section on skin diseases, void of illustrations, might well have been omitted.

A good feature is an introductory discussion which precedes the description of individual diseases in most of its sections. Thus, a general discussion of infection, immunity and immune therapy precedes the description of the infectious diseases; a short discussion of the vitamins is placed at the beginning of the section on deficiency diseases; and a brief discussion of anatomy, physiology and methods of examination occurs at the beginning of each section dealing with diseases of the different organs and systems. Functional disorders, so often neglected in textbooks of medicine, are sufficiently emphasized.

This book is singularly free from the inaccuracies which often creep into single volume texts that include a great amount of material. A proper balance between space allotted to discussions of diseases has been the basis for the number of words devoted to their description. For the most part, all of its sections are up-to-date, though conservatism apparently has been the authors' policy regarding the inclusion of new methods of treatment.

This book can be recommended to the general practitioner and internist as a well written, accurate and complete textbook. The large amount of space devoted to subjects which lie within the scope of other departments probably renders it less desirable than other texts for use by the Departments of Medicine in undergraduate schools.

EDGAR HULL, M. D.

Malaria: By Bernard Nocht, M. D., and Martin Mayer, M. D. London, John Bale, 1937. Pp. 196. Price 10/6.

This is the first English edition of the small handbook on malaria by Professor Bernard Nocht and Martin Mayer, of Hamburg, Germany, and is about as complete a treatise of the subject as could be presented in any book of this size, 188 pages.

The whole subject is brought right up-to-date. One will easily find here, in concise form, practical information in answer to most of the questions that arise in dealing with malaria in practice.

C. C. BASS, M. D.

The Traffic in Health: By Charles Solomon, M. D. New York, Navarre Publishing Co., 1937. Pp. 393. Price $2.75.

This is a book that is written primarily for the laity but which should afford a tremendous amount of interest and information to the medical man. The author presents such subjects as the problem of the patent medicine racket and what to do about it; he discusses habit-forming drugs and he comments rather extensively on "the lunacy of the diet fads." Succeeding chapters have to do with such things as "the habits and customs of the digestive tract" in which he presents clearly and concisely the importance of not making use of, this of course to the laity, expensive cathartics most of which cost about one cent a pound and sell for a hundred times that price. Probably one of the most interesting chapters to the female reader would be that upon "the cosmetic urge—your face is your fortune." Solomon elucidates the dangers that lie in many of the face creams, depilatories, hair dyes, eyelash tonics, bust developers and so on. He

shows that some of the well-known massage creams for example which may sell at $3 cost actually about fourteen cents. The two concluding chapters are short and concise. In the next to last is given the information, what to do until the doctor comes, and in the last chapter he summarizes the material that has gone before.

This book can be recommended by the physician to his patient without any qualms. The intelligent individual reading what Solomon has to say would put the book down firmly convinced in his or her mind that never again would he buy patent medicine or products which are advertised extensively with unsubstantiated claims. The book is easy to read, written in a racy, colloquial style which helps to maintain interest. The volume would be a good one for the doctor to have in his office as a reference book because no doubt frequently patients will ask about this or that patent medicine. Referring to the index the physician will find that he can give the information which is desired but which would not be the information on the cover or the container of the substance in question.

J. H. Musser, M. D.

Diagnosis and Treatment of Sexual Disorders in the Male and Female: By Max Huhner, M. D. Philadelphia, F. A. Davis, 1937. Pp. 490. Price $5.00.

In reading through the book of "Sexual Disorders" by Max Huhner, M. D., one could not help but be impressed that things are brought out in this book which have been so secretly guarded, even in medical literature. The general misunderstanding of sexual disorders is due more to practitioner's ignorance of the condition, as here is brought out that these conditions are of pathologic or psychic origin or a combination.

This book should be read by the gynecologists, urologists, and psychiatrists in order that they may get a clear understanding of sexual disorders so that they may be treated intelligently as to the cause and treatment.

Dr. Huhner noted time and time again that in the male there was congestion in the posterior urethra and prostatic gland and also there was noticed that the verumontanum showed some pathologic change. In the treatment of this he recommended rest, both physical and sexual, gentle massage of the prostatic gland and sounding and installation of a weak solution of silver nitrate in the posterior urethra.

Frank L. Ramsay, M. D.

Eyestrain and Convergence: By N. A. Stutterheim, M. D. (Rand). London, H. K. Lewis and Co., Ltd. 1937. Pp. 89. Price 7s/6d.

This volume of some ninety pages, which is written by a Dutch ophthalmologist in South Africa, presents the author's views regarding the relationship of eyestrain to convergence and his method of treating convergence dysfunction. He believes that convergence is an automatic power of the mind and different from all other forms of ocular movement. He thinks that the internal recti and all the oblique muscles are in constant action during sight. In his opinion, the symptom complex which we call eyestrain is almost entirely due to defective mental and physical convergence. His remedy is a modified series of prism exercises which he calls kenetic treatment.

In my opinion, the author has really overestimated the importance of convergence insufficiency which is only one of a dozen fundamental variables that cause the symptom complex called eyestrain. It is difficult properly to evaluate these many and diverse variables and it is possible that the variables which predominate in South Africa are of lesser importance in America. From an American point of view, the accurate correction of especially cylindrical refractive errors seems more important than the exercising of slight convergence insufficiencies. We are inclined to regard slight heterophoria like ancestors, something we all have a little of, but about which little can be permanently done. In the treatment of functional ailments, two fundamentals of psychotherapy, the confidence in recovery and the urge to get well, play an important part. I wonder whether the same exceptional results which Dr. Stutterheim has obtained in relieving patients of their eyestrain have not been equalled by others with different forms of treatment, including psychotherapy.

In conclusion, the enthusiastic efforts of the author make this little volume well worth reading even though his ideas are somewhat at variance with those generally held in this country.

Charles A. Bahn, M. D.

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Duke University Press, Durham, N. C.: The Compleat Pediatrician by W. C. Davison, M. A., D. Sc., M. D.

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